

California State Journal of Medicine.

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EDITORIAL NOTES.

Remember that the next meeting of the State Society is to be held at Coronado, April 21st, 22nd, and 23rd. On Monday, April 20th, STATE the Public Health Association will have its meeting, and we understand SOCIETY that this will be particularly attractive. Do not fail to go to the Coronado meeting. There is no more beautiful spot on the Pacific Coast. The hotel is comfortable and the table of the best. Special rates have been made, including meals, of \$3.00 per day for one in a room without bath; \$5.00 for two in a room without bath; \$1.00 per day additional for room with bath. The railroads will give the usual rates of one fare and a third for the round trip, on the receipt-certificate plan. The receipt-certificate must be obtained when the going ticket is purchased and must be signed by the secretary at the meeting; the full fare is paid going, and one-third fare on the return ticket. The program will be unusually good and will be so arranged that all may attend every session, and also have an opportunity to enjoy some of the many beauties of the ideal spot. It is especially important that every secretary of our county societies should attend this meeting. Do not fail to be there.

From the *Osteopath*, a journal published in the interest of that sect, in Los Angeles, we quote the following:

IS IT TO "The *Western Osteopath*
LAUGH? for October, edited by Dr.
W. W. Vanderburgh, pub-

lishes in full the last questions of the State Board of Medical Examiners of California. They are fair and reasonable questions, in which any well-educated graduate of Osteopathy should make a good showing. Dr. Dain L. Tasker, of the Board, was assigned and conducted the examination in Anatomy. Dr. Ernest C. Sisson conducted the examination in Chemistry; both with conspicuous fairness and ability."

Now just please, please, bear in mind that "*They are fair and reasonable questions, in which any well-educated graduate of Osteopathy should make a good showing,*" and then let your mind go back over the almost unending "kicks" which have come from candidates who could not pass, and *from regular schools!* Is it to laugh or is to weep and tearfully talk learnedly about total depravity?

Confronted with the fact that there are a good many very excellent papers written on subjects related to internal medicine, but

INTERNAL MEDICINE. which, either because they are too long or because they are too technical, or for some other reason are not well suited for publication in a general medical journal, such as the *Journal of the A. M. A.*, that Association has established a new periodical entitled *Archives of Internal Medicine*. The first number was issued in January. There are to be two volumes yearly, each of some 600 pages, and the subscription price is \$4.00 a year. The establishment of this new publication would seem to be a very wise move on the part of the Association, for it can thus present to those who are interested in the subject of internal medicine much matter that could not well be published in the *Journal A. M. A.*, already grown to a very large size. Furthermore, the Association is an organization of physicians for the benefit of physicians, and there is no good reason to be urged why the Association should not do everything in its power to aid its members and the physicians of the country generally. Our profession is supporting and making rich a good many private individuals and laymen through its productions. Why should we continue to do this when we may ourselves produce this material and issue it from our own printing establishment, giving to the physician the excess profit in the shape of a better publication at a less price? If the first number is a sample of what is to come, and we have no doubt of this, the *Archives of Internal Medicine* will be a most welcome addition to the medical literature of the United States; and, thank God; it is not full of nostrum advertisements! The editorial board governing

the *Archives* consists of Drs. Joseph L. Miller, Richard C. Cabot, David Edsall, George Dock, Theo. C. Janeway and W. S. Thayer. Checks, etc., should be made payable to the American Medical Association, 103 Dearborn avenue, Chicago.

On December 28th, a meeting of the Council of the State Society was called for the purpose of considering the presence of plague in California and whether or not THE PLAGUE SITUATION. the State Society could do anything to aid in the fight against it. After a full discussion, the Council authorized the President, Dr. George H. Evans, to appoint a special committee of five to aid the local society and to endeavor to secure the co-operation of the various civic and commercial bodies, which up to that time had done nothing in the work of fighting the infection. This committee called a meeting in the hall of the California Club on the evening of January 18th and invited the directors of all the commercial organizations, Mayor, Supervisors, etc., to attend. At first sight of the audience, doubtless the committee were discouraged, for only some sixty persons seemed to be sufficiently interested to attend. But, fortunately, there were quite a number of the Merchants' Association present, and the facts expounded before them at once aroused their deep interest. They arranged for and called a meeting of business men on January 28th, on the floor of the Merchants' Exchange, and some six hundred men attended. Existing facts were explained by Dr. Rupert Blue of the Public Health and Marine Hospital Service, and others interested in the work, and both the Governor and the Mayor spoke in no uncertain terms of the dangers of the present situation and from the ignorance and apathy of the people. The necessity for the co-operation of the press was urged and resolutions to that effect were passed. These, coming from the merchants, who support the papers, had a very salutary effect and at last a modicum of publicity has been secured; even the poor *Examiner* stopped speaking in vague phrase of the presence of "contagion" in the city; it hated the word plague. At this meeting a committee of twenty-five, thirteen laymen and twelve physicians, was appointed by the Mayor to co-operate in the work and to stimulate public interest, etc. Up to the end of January, there has been no case of human plague in San Francisco for about a month, though the percentage of infected rats has risen steadily until it is over one and one-half per cent. This seems small until one remembers that even in severe epidemics the percentage of infected rats does not exceed six or seven per cent of those examined, and has been as low as two per cent. The Public Health and Marine Hospital Service laboratory is being enlarged and will soon be in a position to examine all rats obtained. Fleas are very scarce in the city, owing to the cold and rainy weather, and that accounts for the falling off of cases of human plague. With the return of warm weather—and fleas—we may expect to see an increase in the number of human cases.

In almost every state in the Union one or more publications, claiming to be published in the interests of the medical profession, ABOUT JOURNALS are issued at regular intervals; they are classed as "medical" periodicals and are supposed to represent the interests of medical men. With the exception of the *Journal of the A. M. A.*, the various state association journals, and a few issued by county societies, all are published primarily for profit and are owned either by publishing houses, pharmaceutical manufacturers, or private physicians. In some instances the smaller journals are really published at a financial loss, but this is made up to the owner by the books which he receives for review and which naturally are favorably commented upon in his journal. One could very easily designate scores of journals of this class in which no "book review" giving an unfavorable opinion of a book, no matter how bad a work it may really be, has ever appeared. When periodicals are profitable, the profit comes not from the subscriptions but from the advertisements. Anything that is calculated to reduce the quantity of advertisements in such a publication may naturally be assumed to be objectionable to the proprietor, for he dislikes to have his income reduced. This is almost too simple to need the saying. When the Council on Pharmacy and Chemistry of the A. M. A. was organized, probably 75 per cent of the advertisements in "medical" journals were of articles which had gained recognition by medical men on account of the mystery by which they had been surrounded by the skillful writer of the advertising matter relating to them. A few examples will suffice to illustrate this point. "*Anarscine*" was written up as a *cure for dropsy*, though the things which composed it and which permitted it to *cure dropsy*, were carefully concealed from the physician. "*Germiletum*" was solemnly declared to be "*a specific for catarrh*," though how or why, we are not informed. Some things—notably the Lawrence line of nostrums—were, to accept the statements of the manufacturer, and these were the only statements available, capable of curing almost anything in a mysterious but most reliable manner. There were numerous mixtures of acetanilid, under fanciful names, such as antikamnia, phenalgin, sal-codeia, etc., which were said to be—by the manufacturers—*new and most potently valuable* chemical substances with merits only limited by the imagination of the "adsmith" or the extent of lie for which the manufacturer's conscience would stand. The investigations of the Council rent the veil of mystery and disclosed the fraudulent claims for composition or therapeutic marvelousness.

The *Journal of the A. M. A.*, and some of the state association journals, published these disclosures AND OTHER JOURNALS and resented the fact that they had been imposed upon and lied to; also, they refused to advertise the frauds, even though the money was "good" and promptly forthcoming. With

scarcely an exception, the privately owned and published-for-profit journals published venomous attacks upon the Association, its Council, its *Journal*, the state journals and medical organization in general. The storm raged most fiercely, and still rages, though somewhat abated. It was almost with fear and trembling that those who were interested in the cleaning-up movement asked themselves what would be the result of these attacks, for the combined circulation of all these proprietary journals must be very great. And what has been the result? Medical organization has progressed more rapidly in the last six years than ever before in the history of the United States. State association after state association has established its journal, and these, slowly but surely, are coming to the decision that they will not continue the frauds or participate in the graft derived from them, by publishing nostrum advertisements. This condition of things is most encouraging, for it shows that the mass of physicians are not fooled nor misled by the riotous language of the published-for-profit journals. Doctors are a part of "the people" and you know "You can't fool all the people all the time." Particularly when, week after week and month after month, the true facts, without fear and without prejudice, are printed in those journals owned by our own societies and associations and really published in the interests of the medical profession—and not for the individual profit of the editor and owner.

The latest recruit in the ranks of medical journals published by and for the medical profession, is the *Journal of the Indiana State Medical Association*, the first number being that for January, 1908.

To say that it is a fine tribute to the Association which it represents is merely to give no more than due credit to the able editor, Dr. Albert E. Bulson, Jr., Fort Wayne, who for many years edited the *Fort Wayne Medical Journal Magazine* with credit to himself and his publication. But Dr. Bulson, with rather unusual broadmindedness, has recognized that the proprietary journal can not serve the best interests of the medical profession so well as the publication of and for the organization representing the whole of the profession, and he has therefore discontinued the *Fort Wayne Medical Journal Magazine*, or rather, merged it with the *Indiana State Journal*. That this newest of state journals will be welcomed by the physicians of Indiana, we have no doubt; that it will greatly aid in perfecting and maintaining the organization of the medical profession in that state, is a foregone conclusion; that it will keep the place in the first rank of medical journals to which it is entitled by this initial number, may be safely believed. And not the least pleasant thing to note in regard to the newly born journal, is the statement that it will advertise no preparations other than those of the Pharmacopeia, the National Formulary, or such as have been approved by the Council on Pharmacy and Chemistry of the A. M. A. Some

state journals—notably New York—still maintain that they will not accept the ruling of the Council alone, but will be guided by individual judgment. "Individual judgment" is not worth a rap when one is dealing with a bunch of liars, and of all liars the nostrum man is king. He can tell more lies, of more kinds, in more ways, with more semblance of truth, in a more sanguine and apparently truthful way, with more persistency, more deliberately and with greater profit—to himself—than any cuss that has yet been discovered. It takes time, patience and much money to disclose these lies, and all these things are being spent by the Council—but *not* by any state medical organization or its publication. As a natural result, we find that the profession in the great state of New York is having foisted upon it, through the pages of its own journal, some nostrums for the presence of which the physicians of Indiana will not have to blush with shame.

Why not make an effort to secure the membership in your county society of every reputable practitioner in the county, before the end of the present year? The annual reports are now coming in to the secretary of the State Society,

and they show great contrasts. In some sections practically every physician has been enrolled; in one or two instances the local secretary has written to the effect that "we now have all but two physicians in the county within the society, and I think these two will join in another month or so." That is encouraging and quite as it should be. In every such instance it is a very easy matter to show that the secretary is a wide-awake man, taking a deep interest in his society work, and devoting, unselfishly, a good deal of his time to seeing that the work is done and that every physician in the country is invited and urged to affiliate with his fellows in the uplifting of the profession and the increased usefulness of the medical fraternity to the public. A little effort, a little work, a little personal sacrifice may be, will accomplish wonders. A good many men do not feel like applying for membership in any organization, medical or otherwise, unless they are invited to do so. Be sure that they are all invited, not once only, but many times. Others may think that some member may "have it in for them" and thus keep them out of the society. Assure them that such is not the case, and see to it that no small personal spite is allowed to enter into the question of the eligibility of any physician for membership in a county society. Next January the legislature will, unfortunately, once more be legislating and what that body will do when it gets together, only the good Lord he knows! By that time we should have greatly increased our numbers and our solidity. By that time every county society should have, through its special committee, interviewed every candidate for the legislature and have made him conversant with the fact that the county medical society is the body to advise him properly as to how he should regard every proposed act of public health legislation. We can not

expect laymen to understand these subjects or to act properly upon them if we, who alone possess the technical knowledge, do not instruct them. Therefore, get very busy; see to it that every physician in your county who is reputably practicing medicine, is invited to become a member of your society, and does so.

THE PERMANENT ERADICATION OF THE PLAGUE.*

By W. A. BRIGGS, M. D., Sacramento.

Whether viewed from its economic or from its sanitary aspect, the plague is one of the world's great problems. And now that this grim specter of the orient, reminiscent of some of the darkest pages of human history, again stalks, lowering, in our midst, it is particularly meet that the California Northern District Medical Society should once more come to the aid of sanitary authority in molding and energizing public—nay, even medical—opinion. For it was this Society, I believe, which, in the former invasion of this pest, first of all the medical societies of the state rallied to the support of Dr. Kinyoun and, in unmistakable terms, declared its profound conviction that plague did then exist in the City of San Francisco—a verdict that time could not reverse even at the behest of "powers that be."

Our so-called "Island Possessions" and our increasing commerce and intercourse with oriental races invest the plague with increasing importance to the Pacific Coast and hence to the Western Hemisphere.

Primarily a disease of rodents among which it often spreads far and wide before being recognized in the human family; partly subterranean, partly aerial, partly unknown in its means of transmission; remarkable in the vitality of its bacilli and their power of penetrating the intact epidermis; frightful in its mortality, the plague presents to the sanitarian a problem, even when attacked with vigor and intelligence, formidable in its obscurity and proportions and, when neglected, appalling in its possibilities. May we not say then, that the bacillus *pestis*, that microscopic arch-enemy of the human race, is a foeman worthy of our best steel?

No apology, therefore, would seem necessary for bringing this subject again to your attention. To those of you, however, who had the privilege of listening to Dr. Powell's excellent paper on the historic aspects of the plague, covering the same field so soon again might well appear supererogatory if not presumptuous. As better suited to the occasion, therefore, and to my own purpose also, I desire to consider briefly the means necessary to its permanent eradication. For not only is this subject of vast intrinsic importance but, that an enlightened or even a civilized people should long tolerate repeated invasion or constant menace by so formidable an enemy to its economic, no less than its sanitary welfare, is quite unthinkable.

The rodents which haunt the habitations of man

by the intermediation of fleas that infest them, are the chief carriers of the plague. Other rodents, however, are subject to this disease and perhaps occasionally communicate it to the domiciliary rodents and more rarely to man himself.

The "harmless necessary cat" and "man's chief friend," the far too common house-dog, are not unlikely carriers of the disease. After killing and devouring rats, they would certainly harbor the fleas as well as the bacilli of their victims and might easily communicate either or both to human beings to whom they so often come into intimate relation. Fancy one of them taking its accustomed nap on your bed, or complacently lapping your cheek after so delectable a meal! This possibility, it would seem, has not been taken sufficiently into account.

Fleas, flies, mosquitoes, bedbugs, body lice, ants and less frequently other insects and vermin, disseminate and may even inoculate plague bacilli. Fleas, flies and mosquitoes particularly may transport them considerable distances and infect either persons or foods. Fomites and infected foods including the various grains, communicate them to rodents and insects and directly to human beings also.

Man without being himself infected, may be the carrier of plague as has been illustrated, I believe, in the present epidemic in San Francisco. This he might do either by carrying fomites, infected insects or infected vermin.

Finally plague is communicated directly from man to man especially in the extremely fatal and highly infectious pulmonary form of the disease.

Its permanent eradication then, as may be readily inferred, presents several difficult problems:

1. To prevent the establishment of new foci.
2. To eradicate existing foci.
3. To prevent its reintroduction.
4. To exterminate its common carriers.

Although capable of brief statement this program, even when applied to a limited territory like that of San Francisco, is prolix beyond comparison. Should the plague once obtain an extensive foothold on this continent the difficulties of its extermination would be enormously increased, perhaps they would become insuperable. Hence, first among the problems that confront us I have placed that of preventing the establishment of new foci. The effective solution of this problem will require the intelligent and conscientious co-operation of national, state and local authorities which, in the present instance obtains in a very high degree.

But while the theoretical division of the task before us into its constituent problems may afford us a bird's-eye view it does not easily lend itself to practical discussion for the reason that, in a very large degree these problems overlap each other. To avoid the repetition incident to a discussion from this standpoint, I shall adopt a less methodical course.

First among the means of eradication would seem to be the establishment of a National Department of Public Health with a cabinet officer at its head endowed with proper authority in questions of mari-

*Read before California Northern District Medical Society, November 13, 1907.

time, international and colonial quarantine and in full charge of our national boundaries. The plague is never a purely local question. The very moment it obtains a foothold in any country it becomes a national question of the first magnitude. That this is the general opinion tacitly assumed if not distinctly formulated, is evidenced by the fact that in both invasions of the disease the national government has assumed control with the cordial approval of the local, as well as of the state authorities. Not only is the plague a matter of national import, but, for several reasons, it can be more effectively dealt with by national than by local authority. The national government can better effect international regulations and arrangements to prevent its dissemination; can better obtain information regarding its prevalence in our dependencies as well as in foreign countries and can better furnish trained men for the control of outbreaks either local or general.

It can better command the means necessary for these purposes. The expense of permanent eradication of the plague will be enormous and can not well be borne in its entirety by the communities in which this pestilence is likely to prevail. Rat-proofing waterfronts and adjacent buildings will be of itself a serious burden to any seaport and, added to other measures necessary to prevention and suppression of plague, would constitute a burden often times beyond the capacity of single communities. Just now San Francisco faces a condition of this kind. In her impoverished state, she is defending not only herself but also the state, the nation, yes, the continent even, against a common enemy, and when the present epidemic is suppressed the warfare will only have begun. Our Pacific seaports are in equity entitled to aid and they need it. Finally, the national government would be free from those blighting local influences, commercial and political, which, once at least, have imperiled us at home and discredited us abroad.

All of these things the national government can do with less expense than could the individual states. I should be among the first to resent the intrusion of the general government into purely local affairs, but the plague, as I have already remarked, with many other epidemic diseases for that matter, is not a local question. It has never been and never will be.

By pronouncing the rat persona non grata, by fines, restrictions and quarantine of rat-infected ships, inventive genius could be stimulated to the production of a rat-proof ship or at least a ship that could be kept rat free. Sufficient demand will produce even a rat-proof ship.

Infected ships should be kept rigorously quarantined and should be refused discharge of their cargo except after the most thorough disinfection.

Ships plying from infected ports should be kept free from rats and if infested with them, should be held in quarantine until it has been positively demonstrated that both rats and passengers are free from infection.

Vessels plying from infected ports into the interior

should be subject to regulations similar to those of sea-going vessels.

Rats should be prevented from landing from vessels.

Landings, docks, wharves, pier houses and the waterfront as may be, should be made rat-proof and should be provided with accessible boxes or traps where rats would naturally take refuge and could easily be destroyed. Ferrets if found immune to plague might be quartered along the wharves.

All buildings of whatever kind for a mile or more back from the waterfront should be made rat-proof and be kept rat-free. Warehouses, grain elevators and other storehouses where rats might easily obtain food and shelter and thus have more time and energy for reproduction, should receive especial attention. It would seem that ferrets would be particularly useful here.

In rat-proofing both wharves and buildings cement would probably be the best material but, except when constituting practically the entire material of the building as in fire-proof construction, would have to be supplemented by other materials and special devices.

Sewers should be made rat-proof or when this is impracticable should be kept rat-free by cementing places where rats might breed or take refuge and by frequent and generous flushing to drown them and to remove their food. Sewers should be studied and watched with the greatest care for they may well be lines of least resistance for rats when they are vigorously pursued in their usual haunts.

Garbage receptacles should be of metal, securely covered and frequently emptied.

The domiciliary rodents and all other plague susceptible animals near the water front and as far back as possible should be relentlessly exterminated. This is a difficult task, for the rat in the language of the street urchin may be termed "a wise guy." But in a continued contest of wits between him and the Lord of Creation the result should not be in doubt.

In dealing with rats as with most other problems with which physicians have to do, the most important thing in the long run is prophylaxis. Prevent rats and you prevent the plague. "No rats, no plague." The means of prevention are first, rat-proofing ships, waterfronts, sewers, and buildings; removing or destroying their foods; destroying their places of breeding.

Destruction of rats may be accomplished in various ways—by starvation, trapping, infection, poisonous foods and gases, by cats, dogs, ferrets, etc. The most practical and effective means in confined spaces, like ship-holds, cellars, rooms, etc., is by poisonous gases—carbonic acid, sulphurous acid, carbon bisulphide and formalin.

When rats are hungry foods poisoned with arsenic, strychnine, phosphorus, ground glass, etc., are effective.

The plague often appears first among rats. Frequent examination of these rodents, therefore, should be made in ports or other places exposed to infection in order to anticipate or even prevent, if possible, an outbreak among the people themselves.

A relentless warfare of extermination should be waged against fleas, flies, ants, bedbugs, mosquitoes, cockroaches and other insects and vermin—and here also largely by prevention, by destroying their breeding places.

Fruits, vegetables, meats and other foods so often exposed in our markets should be effectively screened against rats, mice, flies and other insects and as far as possible, protected against other sources of contamination.

Cases of plague should be rigorously quarantined. Attendants, particularly on pulmonary cases, should be immunized. Those exposed in infected premises should be freed from fleas and vermin, disinfected, immunized and placed in a detention hospital until the incubation period is well passed.

Infected premises should be strictly quarantined, freed from rodents, insects and vermin and thoroughly disinfected before being reoccupied. On no account should rodents, insects or vermin be permitted to escape from such premises. Premises very difficult to disinfect or to free from pests should be unoccupied under quarantine for a long period and given repeated fumigations or should be burned—preferably the latter.

Rat disinfection of waterfronts including wharves, landings, docks, pier houses and contiguous districts and of shipping of all kinds, should be prosecuted implacably until both waterfront and shipping are made absolutely rat-free, thus preventing infection of new ports or reinfection of the original one. Freight stations, warehouses, grain elevators and freight cars, which I believe not infrequently transport rats to the interior or even from one part of the city to another, should be kept under sleepless scrutiny.

Foci of infection should be treated partly on the principle of "back tiring"; that is, rodents should be absolutely exterminated, beginning several blocks outside of the focus and closing in from the circumference, thus exhausting the plague material in a wide belt beyond the focus while the focus itself is attacked from within. This method would, in a measure prevent the scattering of rodents outward to form new foci or to extend the old.

Since plague bacilli possess marked resistance under a great range of conditions a rat-disinfested territory is by no means necessarily plague disinfected. Infection may remain latent in the dead bodies of rats, flies, fleas and other vermin and insects long after the utter extinction of these plague-carriers, and blaze up anew in their reappearance. We see in this and in the reimportation of plague from the orient the imperative necessity of rat-proofing. This necessity is economic as well as sanitary. The expense and the loss incurred by San Francisco on account of the plague if properly expended in rat-proofing would soon make her practically impregnable to that disease.

Finally, as practical men, we can not ignore the political aspect of this question. In a democracy such as ours no great work can be accomplished unless deeply rooted in public consciousness. A large amount of money will be required for the permanent

eradication of the plague. This may be expended by sanitarians but it must be derived from the people. The people, therefore, must be informed, stimulated, aroused, until their latent energies become dynamic. Only publicity can do this. Medical men should enter on a campaign of education individually, through their medical societies, their medical journals and through the public press. The more the people know of the plague the more generous will be their response to sanitary needs for its eradication.

Recapitulation.

The permanent eradication of plague may best be accomplished by:

1. The establishment of a National Bureau of Public Health with a cabinet officer at its head in full sanitary control of our sea-coast and our national boundaries.
2. The absolute extermination of rodents in territory either infected with plague or exposed to such infection.
3. The extermination of fleas, flies, mosquitoes and other insects and vermin that either directly or indirectly disseminate the plague.
4. Rat-proofing (a) all shipping, both domestic and foreign, plying from infected ports; (b) all waterfronts of sea-ports exposed to infection and of interior points in communication by water therewith; (c) all buildings adjacent to waterfronts and as far back as future experience shall prove expedient; (d) all warehouses, freight sheds, storehouses and grain elevators, stables and granaries; (e) all establishments storing or furnishing foods or food supplies; (f) all hotels, lodging houses, boarding houses, restaurants, saloons, theaters and all other places of business, pleasure, resort, assembly or public use of whatsoever kind; (g) all buildings of whatever kind in process of erection or that may be hereafter erected in all cities, towns or districts suffering or threatened with plague infection; (h) all sewer systems of such cities and towns in their entirety.
5. Frequent examination of rats in ports and districts exposed to infection.
6. Preventing the escape of rodents, insects and vermin from infected premises.
7. Killing cats, dogs, rabbits, guinea-pigs and other domestic or quasi-domestic animals that may have been exposed to plague infection—by catching plague-infected rats for instance.
8. Quarantining (a) all cases of plague, all plague suspects and all persons exposed to plague; (b) all infected shipping; (c) all rat-infested shipping plying from infected ports; (d) all plague infected premises; (e) all infected cities, towns and districts not diligently prosecuting the eradication of plague.
9. Immunizing (a) all nurses, physicians and other attendants on cases of plague; (b) all inspectors and others directly engaged in the work of plague eradication; (c) all of those otherwise exposed to plague infection.
10. Skilled official inspection of all bodies of the dead before embalming or interment in all cities, towns or districts infected or threatened with plague.

11. Destruction or positive disinfection of all fomites.
12. Burning all infected structures not amenable to disinfection.
13. The passage and enforcement of ordinances to facilitate the work of health boards as follows:
 - (a) Requiring property owners under severe penalties to free their premises from rats and other plague-carrying rodents and from conditions which permit or promote their propagation and to remove the conditions favorable to the multiplication of flies, fleas, mosquitoes and other insects that may, either directly or indirectly, disseminate the plague.
 - (b) Prohibiting under severe penalties the discharge of cargo or any part thereof from rat-infested ships except after disinfestation and certification in writing by the proper authority.
 - (c) Prohibiting the approach of such ships sufficiently near to wharves and landings to permit the escape of rats to such wharves or landings.
 - (d) Quarantining rat-infested warehouses, groceries, both wholesale and retail, and other rat-infested business houses dealing in foods and food supplies.
 - (e) Requiring property owners to rat-proof their premises within a reasonable and specified time beginning at the waterfront and extending backward.
 - (f) Requiring monthly examinations by experts of rats caught in such cities, towns or districts.
 - (g) Providing for effective rat-proofing of landings, docks, wharves, pier houses and sewers.
 - (h) Requiring official inspection and certification before interment of the dead.
 - (i) Requiring dealers in foods and food supplies to protect such foods and supplies from rats, mice, flies and other insects and vermin and all other sources of plague contamination.
 - (j) Requiring hotels, lodging houses, boarding houses, restaurants, saloons, theaters and all other places of business, pleasure, resort, assembly or public use of any kind whatever to be kept absolutely free from domiciliary rodents under penalty of a severe fine and closure until thorough disinfestation has been done and attested by an authorized officer of the Board of Health.
 - (k) Making rat-infestation *prima facie* evidence of plague-infection in ships plying from plague ports.
 - (l) Appointing inspectors in sufficient number to enforce such ordinances.

MEDICAL EXPERT TESTIMONY.

Presidential Address, Santa Clara County Medical Society, December 18, 1907.

By ANTRIM EDGAR OSBORNE, M. D., PH. D.

At the time that this society devoted a session to the consideration of the question of Medical Expert Testimony, I made certain suggestions for a radical cure of the evils that now exist and have so prostituted the giving of testimony in Medical-Legal matters that the so-called expert witness is little less than an object of derision and his testimony the torn and ragged plaything of litigants and contestants. So interested did the Society seem, in dis-

cussing Dr. Lyon's excellent paper and the arguments and opinions it evoked, that we unanimously agreed, you will remember, to arrange a joint meeting in the near future with the Bar Association of this county and through mutual effort decide upon a mode of procedure more to the dignity of our profession, more to the satisfaction of our legal brethren, and more to the ends of justice, than can be said of the present miserable system.

Notwithstanding the meeting with the Bar Association has not been held, I trust such a meeting will soon be arranged for and that out of that conference may be evolved the first steps toward securing a rational and dignified presentation of expert testimony. The object of the present address is to give emphasis to what the speaker considers the more pernicious features of the present antiquated system and to present in a little stronger light the suggestions formerly made for reform.

Let us first see what is charged against the present system and then proceed to the examination of the evidence against it and the arguments offered for its modification if not entire abolishment.

The opposition comes from three distinct sources and the whole matter may be reviewed accordingly.

1st. *From the legal profession:* hear the arraignment. From no less an authority than Clark Bell, LL.D, the world-renowned jurist and author, comes the following denunciations:

"The salvation of the system of expert evidence, especially as relating to criminal cases where human life is in the balance, is at stake, and only legislative action can prevent its elimination from our criminal procedure. It is only by arousing public opinion to the exigencies of the situation that we can expect or even hope for any deliverance."

"The degradation to which it has sunk, especially in the Thaw trial, is one of the deplorable phases of the subject. It is well to look the question fairly in the face. The medical expert when he appears as the paid witness for either the state or the accused, is discredited by all, believed in by none!"

"It is a blistering shame to the medical profession now that no important case of homicidal insanity is tried where the four or six witnesses on the one side are not met and balanced by a like number on the other."

"Judges do not at all consider the medical witness as an important factor and juries do not pretend to regard the testimony, or pay any heed to it, and they do not hesitate to so state, publicly, from their seats as jurymen. As the law now stands and as the evidence comes to the jury it is of no value whatever and the juries are perfectly justified in their refusal to even consider it."

"In the mind of the great public it is fast becoming to be universally accepted as a fact, that the paid medical expert swears for the side that engages and compensates him."

"It is incredible that the medical profession has fallen into such a horrible abyss as all this implies."

And again: "The fault is in the system itself and not in the profession of medicine. The law should

be so amended as to make such scandalous conflicts of opinion impossible, upon what the public and the juries consider as an identical question. All counsel know that medical men are not as a rule willing to swear to an opinion they do not entertain."

Among the many other prominent jurists that might be quoted as advocating immediate and sweeping reform, stands conspicuously, Chief Justice L. A. Emory of the Supreme Court of Maine, who is known as the father of the "Emory Act" proposed as a remedy at the last session of the Maine Legislature; Chancellor John R. Nicholson of the Supreme Bench of the State of Delaware; Judge Chas. G. Garrison of the Supreme Bench of New Jersey; Judge Amasa J. Cobb of the Supreme Court of Georgia and John W. Rowell, Chief Justice of the Supreme Court of Vermont. These named have consented to act as a committee to consider and formulate a comprehensive plan for relief.

2d. *From the Intelligent Laity.* Prof. Clarence A. Lightner in a letter to the Medico-Legal Journal of New York, commenting upon the agitation of the subject by that journal, says:

"I wish to say that intelligent discussion of the subject of expert testimony equals, if it does not exceed in importance, any matter that you have heretofore undertaken.

"Naturally the public at large has had its attention called mainly to medical expert testimony in connection with the more notorious criminal trials. Undoubtedly a remedy for the evils, which become manifest from the reports of those cases, is most desirable. I think the law and its principles of evidence, are to a considerable extent, responsible for the unsatisfactory results. However there can be no question but that our method of permitting each party to employ and to pay such experts as he desires is largely the cause of the unsatisfactory conditions surrounding expert testimony at the present day."

The Providence Tribune editorially says:

"With the light let in upon the confused and obscured mass of so-called expert testimony which distinguished to its discredit the malodorous Thaw mis-trial and the recollection of the medical sharps in the almost equally offensive Molineaux case, the reading public is prepared to view with interest the efforts made to pass in the Maine Legislature a bill to provide medical experts for both criminal and civil cases. If the legislators of Maine should rise to the demands of progressive jurisprudence, and the good example set by them should be followed by lawmakers generally throughout the Union, there speedily would result that much-to-be-desired condition under which evidence honestly offered by recognized experts could not be rejected or made to serve a purpose subversive of its intention. The soundness of the assumption that 'there is no essential flaw in medical expert testimony' would be established in law. The common sense at the bottom of this matter is that no court or jury should be free to disregard 'facts presented scientifically by competent persons when the facts bear directly on the

case at bar.' It may be hoped that the death knell of trick expert testimony has been sounded."

The Boston Advertiser commenting on the same matter treats it in like vein as the above and concludes that the proposed innovation "is reasonable and not to be disputed by fair-minded persons."

3rd. *From the Medical Profession.* The opposition from this source is perhaps the most vigorous. Medical men may be expected to show some warmth in treating the subject, inasmuch as they have most keenly felt its manifold injustice and they have also most frequently been the victim of its deranging influences. Dr. F. E. Daniel, editor of the *Texas Medical Journal*, says:

"The jurisprudence of insanity is far behind the present status of medical science; it belongs to a past age. From the standpoint of the medical jurist, the jurisprudence of insanity is defective in at least three particulars:

1st. The defendant in a murder trial has not the benefit of science because recent discoveries and conclusions of medical science are not comprehended in the existing system. The laws have not been made to conform thereto nor do the courts permit the text books, the standard authorities, to be quoted in support of alleged insanity.

2nd. The law leaves to the determination of a jury, often of unenlightened men, metaphysical questions that baffle the ablest scientific minds, to wit, the existence or non-existence of insanity, the degree of impairment of free will and the extent of responsibility of a person adjudged insane by medical experts.

3d. The Courts do not exercise proper discrimination in allowing men to pose as experts."

Dr. E. S. McKee in the St. Louis Medical Review presents this feature of the practice:

"It is generally impossible for attorneys to understand a medical situation and to comprehend the necessity of framing questions which are rational and calculated to bring out the point at issue. The attorneys answer they are afraid of bringing out too much, for fear that the opposition may profit and the expert is handicapped and the court and jury are so confused that they are glad to eliminate the expert testimony and decide for themselves.

"The expert is tolerated and frequently dismissed without honor."

Along much the same lines Dr. David M. Totman, in his presidential address to the Medical Association of Central New York declared that he had been advised by one of his friends, a most influential member of the bar, that there was neither honor, glory nor anything else to be got out of a medico-legal case but to get one's name smirched and dishonored. The conditions which surrounded the giving of expert testimony in our courts were well nigh intolerable, considering the attitude of the public press, the insulting inuendoes of graft and the charges of open perjury committed by medical men on the stand. He offered the following suggestions. Like Dr. Daniel, quoted above, who declared he would, if accused of a crime, rather trust his fate

to a toss up of a penny than to stand trial by a jury to whom is given the determination of questions so far beyond their comprehension, he saw no relief under the present jury system. It would take centuries of education and evolution for the average jury to understand much expert testimony, so no matter how perfect the expert evidence given the verdict would not be influenced one whit. Even the learned judges were not always able to appreciate the bearings of expert medical testimony. He held that hysteria for instance, was a subject of such a nature that neither judge or jury however learned, might be able to execute justice when such a subject was under consideration. No man could pass upon the value of expert testimony in its entirety unless he had 15 or 20 years of study, observation and management of hysteria.

Dr. Ralph L. Parsons has declared:

"The reasons urged for a change in the method of procedure in the adducing of evidence, are pertinent and weighty. When expert witnesses are presented by either the prosecution or the defense it may be taken for granted that the witness already has an opinion or a bias in favor of the side on which he has been called. Otherwise, presumably, he would not have been called by that party. Or, if not already biased, the fact that he has already been called by one of the parties, will be sufficient to cause a bias in favor of that party. Especially will this be the case, when, in addition to the friendly confidence involved in thus being called as a witness, the pecuniary consideration to be expected, is taken into account."

The two essential objections to the present system may be summed up as follows:

1st. The partisanship of experts, as it is viewed by the public generally. For decency's sake let us all assume in the beginning that medical men are actuated by high ideals and governed by a sense of independence and sterling faithfulness to principle. Let us assume that their opinions are the reflex of an unbiased mind, at least as a rule. As a matter of fact, a lifetime spent in contact with medical practitioners leads me to believe that they are less venal as a class and more to be relied upon as a rule, than any other class of individuals. It is also true that now and then we find a medical man made out of very common clay—one perhaps, who under the veneer of professionalism hides the accomplishments of a pervert, a shyster, a liar or a rogue. Police records show that when the medical man does go wrong he is a very dangerous person and studies in applied psychology reveal the deplorable fact that when the trained physician possesses the bar sinister of turpitude, he constitutes the most profound menace to society. This is easily understood, for reasons so patent they require no elucidation. But while the medical degree and accumulated medical honors can not make a man better, his calling can and does. From the psychological reasons associated with the influences leading a man to take up the study of medicine and the practice as a life work, it is equally easy to prove that inherently medical practitioners

are as a rule, persons of a singular appreciation of honor and personal integrity. It follows therefore that those who sell themselves and color their opinions and testimony in accordance with the fee that is offered, are the exception to the rule. But alas, the public is not inclined to make these nor like fine distinctions, so that the honest medical witness has now come to be viewed in these degenerate days of graft, often by court and always by jury as the paid witness of his side, talking for a fee!

A book has been issued recently by a prominent medical author in which this sort of testifying has been termed, "Perjury by Purchase." Other writers have distinctly called such evidence, "a farce from any standpoint." You will see therefore that it is not a question of a man being paid for his services, (for it would be absurd for any one to suppose that one should, much less advocate that he be required, to serve without compensation) but it is a question of a man being paid by either side of the case on trial. It is impossible for a jury to understand how a man can be retained by a side without a consideration and advertisement, position or preferment being as much a remuneration as money, to their minds. And we must not blame the juryman if he associates bias with consideration. The point to be made is this: if the jury or the court or both are inclined to consider the attitude of the witness one of bias, his testimony will naturally be viewed by them as worthless and will be rejected by them in their final judgment. The witness stands discredited before them and the result is as disastrous as if he were known by them to be the rankest perjurer. So long as there can not be an important trial without experts being arrayed against one another, even when called to testify as to scientific facts, the public will continue to revel in low down criticism and to humorously speculate as to the price of each man by the number and prominence of the experts thus arrayed against each other. As a prominent New York lawyer puts it: "When medical experts can be found who will swear directly opposite to each other, it is time for legislation to arrest the evil."

2nd. *The Hypothetical Question.* The best thought of the nation agrees that this form of questioning an expert ought to be relegated to some museum for antiques. It has done more, probably, than any thing else, to bring about the conditions we deplore. The theory upon which the hypothetical question originally rested was that after certain facts had been established by the evidence of ordinary witnesses and admitted by the court, a resume of these salient features as the characteristics of a mythical person could be presented to the expert witness for his opinion thereon, it being assumed that if the individual in a certain cause has been proved to possess such and such characteristics and to have committed such and such acts—all identical with the characteristics and acts of the mythical person of the hypothetical question, and which the learned expert shall declare as his opinion constitutes insane manifestations, then the real person on trial

may be considered insane and hence irresponsible, etc.

I have known trials where the hypothetical question played a most important part—where the attorneys for the defense secured a positive opinion from the experts for his side in his client's favor and where a little later the attorney for the prosecution was able to submit to the same experts another hypothetical question apparently involving the same points as the former but so cunningly framed that the experts were forced to give under the restrictions to which they were limited, an opinion equally favorable to the prosecution. Neither the attorneys nor the court permitted the witnesses to explain the technical differences in the questions, which forced them to give opposing answers, which to the minds of the uninformed jurymen, constituted flat contradictions. To the jury it was all Tweedleum and Tweedledee, but the doctors were asses—that was plain enough.

So much for the objections to the present system. Along what lines may we look for suitable reforms? Pardon me if I say that I have studied these matters from many viewpoints and while my opinions may not be conclusive, I feel that my experiences and the results of my study warrant me in making certain positive suggestions. I have attended upon court procedures and I have had an interesting experience with hypothetical questions. I have also experienced the grilling of cross-examination at the hands of the "gentlemen of the other side." During the past few years I have regularly and consistently refused to appear as an expert in any case where I'd be compelled to attend and testify as the retained witness of either the defense or the prosecution. I have done some expert work under the selective control of the court, however, and I am impressed with the fact that such work can be done most satisfactorily when the expert is named by the court and is given opportunity to render a full and unhampered professional opinion based upon ascertainable facts. Expert work of this sort is worth while. And this brings me to the suggested remedy: Experts to be selected by the court in all cases where needed, and named because of their special fitness; these experts to be compensated by order of the court as it may deem proper and the expense to be borne as a regular trial cost, and such witnesses to be permitted to testify or report their findings and conclusive judgments after full opportunity to investigate all the medical or other scientific facts presented by the case. To my mind the matter of deciding if there shall be one or three experts and also who they shall be, can be most safely left to the judgment of the court. In many cases one expert would be sufficient, though for reasons of public policy it were better to name more than one. In intricate cases three or five could be selected so that the conclusions of the greater number might prevail, after the decisions of our own Supreme Bench. I would have these experts so selected examine every necessary bit of evidence and consider every possible feature of the case, for or against, and I would have them supplied

with every facility in the making of thorough investigations. Of impartial selection, of known fitness, of unquestioned professional integrity and possessing public confidence, such witnesses would be free from the suspicion of bias and their expressions for or against would be convincing. It has been argued that even were such a system established the rich would find a way to introduce their own hired experts anyhow and thus the newer method would be attacked. The criticism is its own most effective answer and refutation. Were such a system in vogue and were the rich rascals (for only rascals would fear the impartial expert) able to put on the stand ten dozen experts to defy the experts of the court, who would believe them? Their influence with the jury would be offset by the nature of their position; bias, suspicion and criticism would do the work for them and they'd have no weight whatever with either jury or court. Such a condition of affairs would soon work its own swift ruin. It would not have the confidence or support of the public, whereas the plan I suggest would.

To bring about the changes desired, certain legislative power seems to be necessary. Let me present the following concrete proposition: let a bill be presented to the next session of our State Legislature to read somewhat as follows:

An Act providing for the appointment of Expert Examiners, defining their duties and providing for their compensation:

The People of the State of California, represented in Senate and Assembly, do enact as follows:

Section 1. In any case, civil or criminal, in any of the courts of this state, when it appears that questions may arise therein upon which expert or opinion evidence would be admissible, the court or judge thereof may appoint one or more disinterested persons to act as Expert Examiners, and he or they so appointed shall make such examination and study of the subject-matter of the questions involved as they shall deem necessary to a complete understanding thereof, and such further reasonable and pertinent examination as either party to the case shall request and the court approve. Reasonable notice shall be given each party of physical examination of persons, things and places and each party may be present at such examinations.

Section 2. At the trial of the case said experts shall present their findings and opinions to the court, either verbally or in writing as the court shall direct, together with such explanations as may offer a clearer understanding of the facts upon which the said findings and opinions are based, but the said experts shall not be permitted to take the stand as a witness for either party to the case at trial, nor shall it be proper to attack, by cross-examination or otherwise, the credibility of either the experts or their evidence, by either party at trial, nor in any other way discredit the court's own expert witnesses.

Section 4. For time in attending the trial or con-

sumed in complying with the orders of the court, and for the necessary expenses incurred in doing all things requisite to carry out the intent of this Act, each expert, as herein provided for, shall be allowed by the court such reasonable sum for time, services and expenses as the judge of the court shall determine and order, and all such sums shall be considered a regular charge upon the county treasury and paid thereout of as a part of the court expenses.

Section 4. When in the trial of any case in any of the courts of this state, questions arise upon which expert or opinion evidence is offered, the court may continue the case and appoint expert examiners for such work, as provided in Section 1 of this Act, and such persons so appointed shall be compensated in the same manner as herein provided for other expert examiners.

ACROMEGALY WITH FACIAL HEMI-HYPERTROPHY.

By V. C. THOMAS, M. D., San Francisco.

Acromegaly as a separate entity was first described and given the name in 1886 by Pierre Marie, and is sometimes called Marie's disease. The name was taken from the Greek, the literal translation of which means having large ends, Pierre Marie's conception of the disease being that this was its characteristic feature. Recent studies and research have disproved this point, yet, like many other misnomers, the name of acromegaly is still retained by common consent. Since Marie's original articles appeared there have been several cases of acromegaly, collected by one of his pupils, extending as far back as 1552, which appeared under the various names of gigantism, dwarf, etc. To the present time the completed histories of cases presumably acromegaly number a little over 221. Carl Von Langer in a study of gigantism in 1872 divided the same into two classes, one of which has since been found to be typical of acromegaly as described by Marie. No disease of such comparative rarity has attracted such universal attention of the most able and eminent men in the profession as acromegaly. Of the early papers those of Versaille, Dana and Hutchinson, and more recently the extensive studies of Tamburini and Sternberg which appeared in '97 and '98 are the most authentic and exhaustive. Benda, writing in the Deutsche Clinic, 1906, says it is becoming the general opinion of anthropologists and of those having made a study of the disease, that all giants and all dwarfs of which there is any record, were probably cases of acromegaly. He also believes, or at least suggests, that the large skeletons of prehistoric men dating back to the time of Adam must be examples of this disease, because the average man of that age has been found to be much shorter than the average man of the present time, and, therefore, it is probably one of the oldest diseases known, though but recently recognized.

The case about to be described possesses several points of interest from a diagnostic point of view,

and from the rarity of the complication. After a long and tiresome search through the extensive and voluminous literature on acromegaly, I find but one other case similar to this, which is described by a number of eminent men, both in this country and Europe, under various headings. The case seems to have been first described by Dana in 1893, while the patient was living. I saw the post-mortem of this same case ten years later at the Presbyterian Hospital, Chicago. As this case so closely resembles mine I should like to briefly note some of its main features. The case to which I have reference is that known as "The Giant Wilkins," first studied by Dana in '93, presented by Lamberg to the Medical Society of Vienna in 1896, studied by Sternberg, Buhl, Sirena, and several other Europeans; by Bevan, Pearsall, and Bassoe in Chicago, in 1903, who made the final report of the case. This giant Wilkins, seven years before death, was the fourth in height. Only three skeletons in museums are larger; Irish giant at Dublin (259 cm.); at St. Petersburg (254 cm.); and Patrick O'Byrne, London (249 cm.). Wilkins (245 cm.).

Sternberg in discussing this case groups it together with Bewel's and one of Sirena's as pathologic non-acromegally gigantism, the pathological feature of this group being tumor-like exostoses of the skull. In differentiation from Leontiasis he says, if the disease is extensive and associated with gigantism a confusion with acromegaly is likely; this actually happened in the case of the giant Wilkins. Schmidt in his treatise on gigantism was positive that Wilkins' case was not one of acromegaly; yet post-mortem showed that it was.

The personal history, in brief is,

Admitted to service of Bevan at Presbyterian Hospital, June 28th, 1902. Wilkins, age 28. Family history negative so far as giants, tuberculosis or tumor. Weighed nine pounds at birth, was normal until four, when rapid growth began. Over six feet at ten years; at eighteen he was eight feet two inches tall. Usual diseases of childhood, lateral curvature of spine for about the last twelve years. At eight, notices small growth about left eye; this continued to grow until four or five years ago, since which time it seemed to be stationary until three months ago, since when it has increased rapidly. Saw Professor Virchow in Berlin, who, so he says, "pronounced the growth benign. It was on the external surface of the skull and would probably never cause him trouble." Three months ago he had severe pain in left frontal and temporal region each morning on rising; pain disappearing gradually at ten o'clock. For the past month he has required the constant use of opiates. One month ago he lost the vision in the left eye. Eye examination one year ago, normal; now has choked disc. Thinks it has been weak for several years. Three weeks later loss of vision in right eye, saw dimly on retiring; next morning could not appreciate light. He has had severe spells of vomiting during this time; these spells have not been closely connected with eating. No sensation over the left side of the face; for one month ringing sensations, pains accompanied by deafness in the left ear. Since his arrival at the hospital has been dull, almost semi-stupid. One week after loss of vision in right eye he died. Physical examination: Eight feet two inches tall, well proportioned. There is a growth on the left side of the head which extends from the median line outward and backward

to the external auditory meatus, and downward over the face to the alveolar process of the superior maxilla. Left eye closed, left upper lid thicker than right. Pupils do not react to light or convergence. Left eye is immobile. Tongue does not deviate on protrusion. Muscles on both sides active. Left side of face and tongue devoid of sensation. Urine examination, Sp. Gr. 1027, acid; no albumin, sugar, or casts. Blood examination: Hmg. 85% red blood corpuscles 4876000 Pml. 9,300 Opth. Examination showed a bilateral choked disc. P. M. held immediately after death by Prof. Heltoen, assisted by Dr. Loeb and Bassoe. Anatomic diagnosis. Necrotic and ulcerative colitis, cirrhosis of liver; chronic catarrhal gastritis; epitheliosis of esophagus; hemorrhagic broncho-pneumonia; enlargement of thyroid; sarcoma in region of hypophysis; extension of tumor to subcutaneous tissues; diffuse hyperostosis of frontal, left parietal, left temporal and left superior maxillary bones; calcification of left pleura and spinal arachnoid, compression of brain; general gigantism.

The base of the skull is greatly deformed, on the left side the anterior fossa is obliterated by the thickened frontal bone and the middle fossa is almost filled with bone. The sella turcica is wide, its floor partly eroded. In this region is a large tumor mass, which has grown into the pharynx, orbits, and ethmoidal sinuses, and has destroyed the roof of the nose. The roof of the left orbit has been much more extensively invaded than the right. At the base of the skull in the median line, after removing the brain, is a pedicle, darker than the tumor mass. This is found to be the infundibulum, and measures 3 mm. in diameter and is inserted into a round elevation 13 by 6 mm. of the same color as the stalk. The tumor itself is white on the surface, lobulated, the lobules 2 to 4 mm. wide. On section the superficial part of the tumor is white, a gelatinous fluid exudes from the cut surface. The portion of the tumor removed with the phypophysis weighs 150 gm., total weight of brain 1,540 gm.

Micro. examination of serial sagittal sections were made of the tumor, which was designated an osteoplastic sarcoma with edema and mucoid degeneration. The hypophysis and its relation to the tumor, a fibrous membrane (duramater) was found separating the hypophysis from the tumor. There were no transitional cell forms. Some enlargement of the hypophysis is present; is flattened from before backwards in all sections by the pressure of the tumor. The histologic structure is essentially normal, though there are many and abundant engorged vessels, numerous hemorrhages, a few foci consisting of densely packed, small, round, deeply stained mononuclear cells, an occasional amyloid body, and in places, the large eosinophilic, and epithelial cells are vacuolated.

"Bassoe" designates the case as one of gigantism with facial hemi-hypertrophy and leontiasis ossea. "Journal of Nervous and Mental Disease. September, 1903."

The history of the case which I now report is as follows: Father, 55, born in Ireland, good health, no tuberculosis, tumor, Bright's disease, or giants in the family. All, however, were tall. The shortest was 5 feet 7 inches, the tallest 6 feet 1 inch. Mother, age 52, height 4 feet 10 inches, weight about 125 pounds. All the immediate relatives were short. Mother's father died of typhoid at the age of 62. Mother's mother, cause of death unknown, at the age of 71. Most of the other relatives lived longer—in fact, it was a long lived family. No history of tumor, kidney trouble, tuberculosis or insanity in the family. Patient is one of nine children. One child died of cholera infantum at the

age of 18 months. All the other children in good health, none as tall as the father, except this patient.

On March 1, 1907, I was called to examine this patient relative to his sanity. Age 22, born in San Francisco. By occupation ornamental tile-setter. Had the ordinary diseases of childhood with perfect recovery. At seven fell a distance of about 14 feet, striking on the face and chest and breaking out four upper teeth. Did not lose consciousness. No other apparent injury was found or complained of at the time. No other injury to the head of any kind is known to have occurred since then. At nine years had summer complaint, was delicate for a time, recovery seemed perfect. Was about same as other boys at this age. Completed the grammar grade at 15 years. At 16 began to learn the trade of tile-setter, at which he showed marked ability, learning in three years what ordinarily required four. Up to 16 years of age he was neat in dress, of good habits, amiable disposition, but at this time began to grow rapidly. Parents also noticed that he required a great deal of sleep. He was hard to awaken in the mornings, and often late to work. Was not energetic nor ambitious, or put forth much effort to advance himself in his trade. Had few associates; has read a great deal of cheap literature, dime novels, etc.

At 19 he was 6 feet 1 inch tall and in apparent good health. Had up to this time made no complaints whatever of pains or aches of any kind. At this time it was noticed by parents that he began to sweat nights, increased appetite, more time required for sleep. The sweats increased gradually till the sheets and underclothing were saturated nightly. About six months after appearance of night sweats he was helping carry a gas mantel weighing about 60 pounds and walked backwards. He stepped down a distance of about six inches when a sharp pain was felt in the lower part of his back, but did not quit work. Continued work about one week after this time, then stopped because he thought the work was too hard for him, and has done no work of any kind since. Did not see a doctor at the time of the accident and had no other complaint than the pain just mentioned. He has remained home ever since this time, does not go out of the house, sleeps a great deal, has an excessive appetite, and profuse night sweats. He denies having headaches, dizziness or trouble of any kind with his eyes. From the parents, however, I learned he has often complained of occipital headaches, backaches and trouble with his hip, but he would not admit this to any of the physicians called in to see him nor to myself, because of a fear that he would be given medicine or be taken to a hospital and operated upon against his will. Since the accident he has complained of an excessive languor and indisposition or inability to work, due to the weakness and tired feeling in the back. While walking he has no pain or tired feeling but when sitting down it seems to come over him, making him feel that the effort to get up is too great a tax on his strength. The change in the speech seems not to be noticed by the patient at all, but the parents state that this came on gradually, making its appearance about one year ago; also at this time parents noticed that the feet required increasing sizes of shoes; the head a larger hat, and that he began to grow taller, becoming less active and sluggish in gait. There has been a gradual change in temperament, most noticeable in the last year. Patient is sometimes melancholy and broods over his supposed accident. Is continually finding fault and taking exceptions to the actions of his two sisters, particularly to their demeanor toward their male friends, often accusing them of impure motives and of attempts to make secret appointments. At first this was not noticed, much because he did not insist on it; of late it has been

apparently uppermost in his mind, so that he has quarreled over this and similar topics with them almost constantly. He sits in the kitchen for hours at a time saying nothing, doing nothing, but watching every movement of whoever may be there at the time. Seems timid of the dark and will not sleep in a room unless a light is kept burning, due to a fear he entertains for his personal safety. He reads the daily papers a great deal. Seems to possess fair reasoning powers in most things, has a fair memory, but his speech is slow and difficult, the lingual sounds being particularly hard to make. He seems perfectly content with his surroundings. He has a few ideas of persecution, claiming that his sisters pick on him and are trying to get rid of him, and that he is not given enough to eat, so that he has to obtain some of his food by stealth. Venereal history negative.

Physical Examination.—The general appearance is that of quite a large young man who has a very peculiar stooping attitude, shambling and clumsy gait, of a general unkempt appearance. The hair is curly, quite thick and very coarse. The face has a peculiar bleached appearance, and is covered with large freckles. The contour of the face is that of an oblong, and strikes one at first glance as a most unusual type. It seems out of proportion to the size of body as a whole, and is asymmetrical, the left side being the most noticeable, the right side slightly shrunken. This, however, is more apparent than real.

Examination in Detail.—The left eye is higher than the right, but both eyes seem fairly prominent. The supra orbital ridges are prominent, the left higher than the right, the malar bone on the left side quite prominent. Nose very thin at the base, long and rounded at the end, with dilated and thickened alae. The upper lip is pale and thicker than normal, the lower lip markedly thickened, everted, pale and droops at the corner. All of the teeth of the upper jaw are badly decayed and seem set apart wider than normal. The alveolar ridge is thickened; the teeth of the lower jaw are in slightly better condition though separated still wider than in the upper jaw. The alveolar ridge much thickened. The tongue is very large, completely filling the mouth, and is handled with much difficulty and hesitation; this is most noticeable when making the linguals or using unfamiliar terms. The tongue is creased in the center and shows the impressions of the teeth along the margins. It is covered with a thick pasty material at its base, through which is noticed the enlarged papillae; and when protruded is coarsely tremulous and deviates slightly to the right side. The lower jaw shows the most apparent change seen in the face. The lower arch being pushed forward three-fourths of an inch the circle is larger as a whole and there is a noticeable displacement of the arch toward the right side so that the upper and lower teeth do not meet on the right side. The body and symphysis are much larger than usual in all diameters. To such an extent has this enlargement progressed that the jaw angle has become obtuse, the neck seems small for the size of the head, which, as a whole, inclines forward on the chest. The clavicles are strongly curved and increased in all diameters, particularly the outer end, which is much broader, thicker, and rougher than normal.

The chest is flat and poorly developed, is flattened antero-posteriorly and moves but little on inspiration. At the lower end of the sternum there is a circular depression about two inches deep, three inches in diameter, causing the ensiform cartilage to be tilted acutely forward. The ensiform cartilage is larger than normal and very hard, with numerous elevations upon it. Similar nodules are present at the junction of the ribs with the sternum on the clavicles and the long bones. The right side

is bulging with a corresponding depression in the left side, due to the existing kyphoscoliosis in the dorsal-lumbar region. The abdomen is pendulous when standing. Numerous excoriations appear on the body, self-inflicted, as a result of scabies. The genitals are undersized; both testicles small and soft. The body is almost devoid of hair. Arms small; muscular development poor. The hands appear out of proportion to the arms and size of the body; they are, when hanging by the side, cyanotic, beginning at the wrist and extending to the first digit of the phalanges. The remaining portions are pale. The hands are enlarged in all diameters. The fingers are large and puffy, the creases are deep on both aspects. The nails are short, thin and elevated at the ends, are overlapped on the sides and base by the fleshy parts. The finger and thumb ends of both hands are thick and pad-like. The thumb is deflected from the hand with atrophy of the thenar eminence, the hypothenar is enlarged as are all other dimensions of the hand. The hands are at all times cold and bathed in a profuse perspiration. The same changes of shape and deformity just described in the hands are found in the feet. The joints in both are very movable; the thumb and great toe on manipulation produce grating sounds, but cause no pain. Both patellae enlarged, the left more than the right. The left knee has a cylindrical, fluctuating swelling, involving the whole joint, extending from insertion of patellar ligament six inches above upper margin of patella and from the edge of the popliteal over the knee to the other border. Causes no pain on movement or pressure, no pain on walking. Grating sounds heard on passive movement of the knee. Deep palpation shows floating patella and a small point of tenderness on the anterior aspect of internal condyle.

March 15th.—Examination of eyes by Dr. Frederick, reports no change in the color or the form of the optic disc, no vascular change or evidence of present or past inflammation. Field of vision is normal, slight strabismus convergens. Right eye 20/20, left eye 18/20. Nose has deviation of septum to the left, throat shows chronic pharyngitis.

Urine Examination.—24-hour specimen, 1200 cc. Sp. Gr., 1021. Straw color, no albumin, no sugar, few hyaline casts. Urea 1.5%.

Palpation, Percussion, Auscultation.—Heart enlarged, apex beat in nipple line, no murmurs, or other vascular change found; pulse 82, soft, small. Spleen enlarged but not palpable, extends from lower border of 8th to the costal margin. Liver extends upward to lower of 5th interspace and $\frac{1}{2}$ -inch below costal margins. Chest negative.

X-Ray of Head, Hand, Knee and Foot.—**Head:** Nothing in nature of tumor could be made out, cranial vault about ordinary thickness. Upper and lower jaws show marked overgrowth with muscular attachments exaggerated. **Hand:** Aside from the excessive size but little change in general form. The sesamoids of thumb large. No tophi in the joints. All extremities of distal phalanges are enlarged and rough. Same conditions prevail in feet. **Knee:** No tophi. Patella enlarged. The internal maleolus enlarged, but no erosions or other changes shown in synovial membrane.

Measurements—

Height, 6-2½.

Weight, 205 lbs.

Reach, 6-6½.

Head-Occip-front-circle, 24¾.

Fronto-mental, 26½.

Occip-mental, 29.

Base of nose, 2-3.

Alae of nose, 2½.

Circle of neck, 15.

Base of nose mid-line to occip-prob, right 11 1-6,

left 13.

Base of nose mid-line to ext-audmeat, right 9, left $9\frac{1}{2}$.
 Sub-mental process to tragus of ear, right 6, left $6\frac{1}{2}$.
 Circle of elbow at level of inter-cond., right $10\frac{3}{4}$, left $10\frac{1}{4}$.
 Circle of waist at level styloid proc., right $7\frac{1}{2}$, left $7\frac{1}{2}$.
 Circle of meta, carp., right 9, left 9.
 Base of thumb, right $3\frac{1}{2}$, left $3\frac{1}{4}$.
 Circle of last phalnx of thumb, right 3 1-16, left $3\frac{1}{8}$.
 Circle of base of first digit, right $3\frac{1}{2}$, left $3\frac{1}{8}$.
 Circle at base of third digit, right $\frac{1}{2}$, left 3.
 Circle at base of fifth digit, right 2 3-6, left $2\frac{1}{2}$.
 Thumb, right 3 1-6, left 3.
 Second finger, right 5, left $4\frac{1}{4}$.
 Ring finger, right 5, left $4\frac{1}{8}$.
 Little finger, right $4\frac{1}{2}$, left $4\frac{1}{8}$.
 Circle of thigh at groin, right $20\frac{1}{2}$, left 20 1-6.
 Circle of knee at center of patella, right $14\frac{3}{4}$, left 17.
 Circle of calf, right 13, left 13.
 Circle of ankle, level or int. mal., right 11, left $10\frac{1}{2}$.
 Circle of foot, int. condyle, right $10\frac{1}{8}$, left $10\frac{1}{8}$.
 Circle of base of great toe, right $3\frac{3}{4}$, left $3\frac{3}{4}$.
 Circle of chest at the nipple, right 45, left —.
 Patella, wide, right $2\frac{3}{4}$, left 3.
 Patella, long, right $3\frac{1}{8}$, left 2 2-3.

After completing these measurements I saw the patient at weekly intervals and gave directions as to his diet, food, etc. He is always very free in his promises to carry out instructions but never doing so. After several attempts to get the patient to go out of doors and to follow directions for his personal care and on his becoming much more irritable to such an extent that he refused to obey any request of his parents and had threatened personal violence to his sister, it was decided to remove him to a hospital where some control might be exercised over him. With a view that after a week or so of such discipline of which he seemed in need, that he would then obey his parents.

Accordingly, on June 27th he was taken to St. Mary's Hospital. Here he seemed quite contented, ate well, slept well, was taken out of doors daily, forenoon and afternoon, and made no complaints at all.

The left knee still swollen, a compression bandage applied after inunction of Guaiacol and olive oil. Under this treatment the swelling became less tense and noticeably less in size. A variation of about 1 to $1\frac{1}{2}$ degrees of temperature occurring daily. It is not recorded, but the bowels did not move except on giving a cathartic, more or less tympany present all the time.

Urine examination of June 28th showed decrease in total output of urine with Sp. Gr. 1034, acid, no sugar, albumin, or cast, but loaded with urates. Three other specimens were examined, no sugar, albumin or casts were ever found. Urea decreased from 1.5% in the early part of June to 0.2%; this was last urine examination. On July 8th, after having had the knee thoroughly cleaned the day before and put up in 1 to 4,000 Hg. Cl. 2 and a second cleansing the knee was asperated under local anesthesia (Schleich's No. 2), drew off 180 cc. straw colored fluid perfectly clear, no shreds or other microscopic contamination, microscopic examination of a centrifuged specimen gave negative results as to tuberculosis, through a mistake no culture was made. Four dr. of iodoform emulsion was injected into the knee and bandage applied. Some pain was complained of in the knee this day. The next day no more pain in knee, but the temperature with

morning remission rose to 102. Constipation more obstinate than usual, and the day after operation patient began to have frequent vomiting spells; nothing was thrown up except the nourishment that had been given immediately preceding, always greenish in color. Temperature became slightly less each day until the fifth day, at which it became normal. Puncture wound healed; no pain in the knee. Nothing, however, would pass from the bowels except when produced by drastic purgative enema. On July 13th, the right eye was somewhat injected and slight lachrymation, but he complained of no pain but said he did not see well. July 14th, pain in the eye was worse, some ptosis present and limitation of movement. 15th, pain in right side of head and eye. Ptosis more marked, also protrusion of eye. On July 16th no movement of the eye. Ptosis complete, apparently no change in the mentality. Total blindness in the right eye. Left eye somewhat injected and vision poor. July 17th, protrusion of right eye more marked, ptosis complete, the eye fixed more prominent with some limitation of movement. Can hardly see. Temperature in the morning rose rapidly to 105.

Examination of the eye by Dr. Frederick, who reports as follows: Right eye proptosed and fixed, swelling of optic disc, veins tortuous, arteries small, no hemorrhages in retina. Left eye fundus normal with the exception of slight blurring of disc normal. Both pupils widely dilated; pupillary reaction very slight in left, none in the right. Tension not increased in either eye. On the first appearance of trouble with the eye I became convinced that this was a beginning of the end when the next day saw a marked change for the worse. Dr. Ryan of St. Mary's, with whom I had often consulted relative to the treatment of this case, also believed that the end was near and that his intractable and persistent vomiting was due to the presence of tumor, and Dr. Frederick, after examination just given, concurred in diagnosis. At the suggestion of Drs. Ryan and Fife blood examination was made, as follows: July 17th, 1907, hemoglobin, 90%. Red cells, 4,690,000. White cells, 14,400. Pmn., 63.4%. Large Mn., 6.9%. Small Mn., 29.5%. Lane, M. D. Death occurred a few hours later. Post-mortem refused by the parents.

Pathogenesis—White thinks that many of the so-called Lympho Sarcomas reported were in all probability some of the hyperplasias. It is a lamentable fact that where a most careful examination in all other respects was made, the cellular changes in the pre-hypophysis were neglected, and it may be possible that in all cases that the cellular growths are one and the same. Of the various tumors described as being found in this gland post-mortem are in the order of frequency, glioma, sarcoma, lymphoma, systoma, and connective tissue tumors.

Theories as to Pathogenesis—1. White claims it to be a specific lesion of the pre-hypothysis, increase in the number of cells and this secretion of the glands, accompanied by hyperplasia or adenoma. 2. Benda believes the disease is due to a hyper-production of an internal secretion, and this acts as stimulating or irritating substances on certain portions of the body frame work and CT. elements leading to the characteristic deformities that occur in Ac. he believes that an atrophy of the gland with a diminution in the production of its secretion will be followed by anatrophy of the body instancing dwarfs as examples, or if a Hyper. of the glands and increase in its secretion but no change in composition, we have produced the symmetrical giants

and increase of amount but alteration in character gives the typical acromegaly.

Physiology has not yet been determined. It has been extirpated in dogs, one of which lived a year and showed apathy, somnolence and a weakened gait, lowered temperature, tremors, etc. Another investigator operated on another animal successfully but no change was noticed. The preponderance of opinion points to the fact that there is a secretion produced in the prehypophysis intimately connected with the overgrowth of the CT. and bony frame work of the body, and that in the normal conditions of the glands might be the governing influence.

Diagnosis—The pronounced and characteristic picture of this disease is usually apparent at a glance. The general appearance is more striking and characteristic when seen at a distance than on a close and detailed examination. Usually the first thing noted is the bi-lateral enlargement of the extremities, the oval face, the enlarged nose, enormous lips, the beetled brow, enlarged jaw, excessive size of body.

Sometimes the diagnosis must rest on no special set of symptoms but on a broad general view of onset, symptoms, signs and abnormalities and above all on progression.

Prognosis—It is absolutely bad, no case has ever been known to be cured.

Treatment—As regards a cure this is nil. So far as therapeusis is concerned it may for general purposes be divided into symptomatic, general and specific. Symptomatic and general being palliative only.

Specific Treatment, Surgery—All of the literature on this subject has not been at my disposal. I have found but one account of attempted removal of pituitary, and this with a fatal result. The case, however, was said to be an unfavorable one from an operative standpoint, the patient being well advanced in disease and very weak. Banda sees no reason why the skilful hand of the surgeon having removed successfully the gasserian ganglion, might not by persistence and perfection of the technique go on a little further and extirpate the diseased pituitary gland, for it seems in this way only is there hope for successful results in this otherwise fatal disease.

Summary—The case seems a most unusual one with the single exception of the case reported by Dana. I find none other similar. Although it is not unusual to have some mental derangement, it rarely assumes the psychopathic sexual type as shown here.

It also takes an added interest by so closely resembling the case just described, but differs, in that when the active tumor symptoms developed, it was much more rapidly fatal. The post mortem finding of the preceding case were of especial interest because of the numerous observations and differing views as to the diagnosis by eminent men, and the diagnosis only being settled by post-mortem, and in connection with this case because of their similarity in clinical appearance and a post-mortem

here denied, but in view of the findings of its preceding homologue, leaving little, if any, reasonable doubt as to what one might with reason have expected to find, and in all probability was present here. The persistent absence of albumin, sugar or casts also is of interest, in that one or both are given as the classic picture. One phase of the case recalls an experience with another operative case in which some prosthetic work was just about to be done on a child's nose, when the patient just before the introduction of the needle was seen to shiver. Thinking it was due to fright, we expected to go right ahead when the patient shivered again. Then an examination of the chest was made and pneumonia was found to be just setting in; and it would have been next to impossible to convince any one, had the operation been completed, but that the same was due to pulmonary embolism.

In this case after the first rise of temperature I thought it might be due to a knee infection or possibly an idiosyncrasy to the iodoform injected into the knee. Dr. Ryan, however, gave it as his opinion that the vomiting and operation occurring in what otherwise might appear as natural order, had in reality, no connection. Subsequent happenings proved the correctness of this view as a puncture of the knee showed nothing but serum.

The evidence of tumor as shown by eye examination is also somewhat unusual, developing in the right eye only three days, and in the left only one day before death occurred. After reviewing the literature of the cases it seems a warrantable conclusion that any case that presents the ordinary bony facial changes, particularly when accompanied by the usual ones in hands and feet, may be considered a true acromegaly irrespective of whatever other complications or disease may be present.

A REPORT OF ELEVEN CEREBRAL COMPLICATIONS DUE TO ACUTE AND CHRONIC SUPPURATION OF THE MIDDLE EAR, WITH COMPLETE ANALYSIS OF FIVE CASES.*

By CULLEN F. WELTY, M. D., San Francisco.

In 53 mastoid operations, 17 of which were for acute mastoiditis, 36 for chronic suppurative otitis, I have found 11 cerebral complications, divided as follows:

Extra dural abscess, 6; serous meningitis, 2; purulent meningitis, 1; infectious sinus thrombosis, 2.

I wish to say at this place that all the cerebral complications developed as the result of delayed operation, and none of the cases that were operated early had complications at all. The chronic suppurative otitis cases that developed cerebral complications had cerebral manifestations prior to operation.

Extra dural abscess and peri-sinus abscess I group

* Read at the Thirty-seventh Annual Meeting of the State Society, Del Monte, April, 1907.

* Read at the Fourth Annual Meeting of the Nevada State Medical Society, Reno, Nevada, October, 1907.

in the same class. Anatomically the same, clinically they differ.

Four of the cases were peri-sinus abscess. Two of this group were further complicated by other cerebral affections and will be reported in full. One case of peri-sinus abscess with granulation tissue on the sinus wall was complicated by a Betzol's abscess. One case of peri-sinus abscess without any other complication. Two of the cases were from acute infections, one of which followed fracture of the base of the skull. The remaining two cases were the result of chronic suppurative otitis.

Two cases of extra-dural abscess were in chronic suppurative otitis. One case had such symptoms that an extra-dural abscess could be suspected, and was found at operation by a small fistulous communication. The other case was accidentally discovered by uncovering the dura in the middle cerebral fossa. Two cases of serous meningitis from chronic suppurative otitis. One case a purulent meningitis from chronic suppurative otitis. Two cases of infectious sinus thrombosis in acute suppurative otitis.

Case 1. Female, aged 21 years. Had ordinary diseases of childhood. Acute suppurative otitis following scarlet fever at the age of 8. The discharge continued uninterrupted for two years. Adenoïdes were removed and drops were used in the ear, which remained perfectly dry for one year. Since that time the ear has discharged more or less. Examination: Weber in good ear. Schwabach somewhat shortened. Rinne, right ear positive, slightly shortened bone conduction. Rinne, left ear negative, considerably shortened bone conduction, very much shortened air conduction. Right ear whisper 25 feet, left ear, whisper on contact. Acoumeter on contact. Right ear apparently normal. Left ear, caries of the attic wall with a fissure extended into the same. Some granulation tissue about this fissure with the tendency to bleed on manipulation with probe.

Jan. 19, 1905. Radical operation, closing by Körner flap. Posterior wound healed by primary union. On removing the periosteum from the mastoid, the bone showed a dark blue color. This was produced by the careous necrotic mass of the mastoid cells. The outside shell of bone was more porous than under normal conditions. The hammer and incus were almost destroyed by caries. There was a fistula posteriorly and below the facial nerve, which could not be eliminated, as it would have destroyed the facial nerve. However, it was curetted as well as possible by the use of straight and curved curettes. I wish to direct particular attention to this lesion as I consider it wholly responsible for the symptoms that will be recorded later. The wound was dressed every second or third day. The patient complained of so much dizziness, headache and pain on the side of the head that she remained in the hospital for thirty days. I attribute some of the headache to a compound astigmatism which was partially relieved by the continuous use of her glasses. While in the recumbent position she was not dizzy. When she assumed an erect position she would become very dizzy and at one time fell from her chair. This can be accounted for in but two ways, first, that of injury to the semicircular canals at the time of operation; or second, to an infection which I believe most likely took place by way of the fistula which I described before.

Twenty-four hours following operation she was reported by the nurse to be delirious. This happened two or three times in the course of as many days. Complained of headache and soreness about

this side of the head, which gradually subsided. When she began to walk her gait was that of a person with a fractured pelvis. She is a highly sensitive, hysterical woman, and I attributed part of the cerebral manifestations to her mental condition. The eye background was perfectly normal.

March 27, 1905—The ear absolutely dry; hearing unimproved.

May, 1905—Sero pus began to discharge from this fistula and continued until September, 1905, at which time I again performed a curettage. This was treated antisepically until November, 1905, when she was again discharged as cured.

Since the recovery from her primary operation she has had no cerebral symptoms of any kind.

March 2nd, 1906—Complains of intense headache over this side of the head and dizziness a great deal of the time. The whole of the temporal bone on this side was tender to pressure and the slightest percussion would elicit excruciating pain. At this time there was a serous discharge from this fistula, which in the course of two weeks disappeared entirely. The cerebral symptoms continued with acute exacerbations, at times so severe as to require morphine. Her pulse repeatedly reached 50, full and strong. She had some vomiting, which was probably due to morphin. Examination of the eye, negative. Physical examination, negative.

At repeated consultations operative procedure was recommended by all but one physician, who maintained that it was due to a nervous manifestation.

May 15, 1906—Patient entirely well. Cerebral symptoms entirely gone.

Diagnosis: Serous meningitis: Infection by way of the fistula to the semicircular canals and the aqueductus vestibuli. This will explain the cerebral symptoms that followed the primary operation, as well as the cerebral symptoms that followed in the later infection. During the first infection the cerebral symptoms were scarcely sufficient to warrant further operative procedure, because they seemed to improve almost daily after the second or third day. However, when we are confronted with cerebral symptoms later, and the only possible source of infection is by this fistulous communication, it must be admitted that it was by this route. Furthermore, the patient had an association of cerebral symptoms, such as dizziness, headache and localized pain on the affected side which should always lead you to suspect cerebral complications, especially when all the mastoid cells have been removed. If it is not today, it will be in the near future considered conservative surgery to open and explore.

My diagnosis prior to her recovery was different. At this time I thought she had an extra-dural abscess or brain abscess, with a decided leaning for extra-dural abscess of the posterior brain fossa infection by way of the semi-circular canals and the aquæductus vestibuli. No doubt the infection traveled this route and was of a non-bactericidal invasion. I wish also to call attention to the fact that the fistula, which was discovered at the primary operation, and which has apparently been responsible for the infection that followed, should have been destroyed entirely at the sacrifice of the facial nerve, to remove all possible source of cerebral affections to follow. Or should we trust in Providence, as I did in this particular case, and almost lost my patient?

In this particular case the patient made a recovery without operative interference. This was good luck rather than good judgment on the part of the patient, and I am confident that such cases will not

often repeat themselves. In conclusion, will say that by early operation in cerebral affections you may cut short or eliminate entirely your source of infection, which, on the other hand, if allowed to remain there is but one termination, and that is death, with but an occasional exception such as I have illustrated.

Case 2. E. H., male, 28 years, clerk by occupation. Dr. Rene Bine of San Francisco very kindly furnished me with the medical history of this case, as well as the working out of the various nervous manifestations. Had measles at 17, which were complicated with pleurisy. For two years was in the tropics in good health. On his return to San Francisco 3 years ago had malaria. For the last two years has been about San Francisco, has lost 30 pounds in weight during the last 3 years. Present weight 128. Height 5 feet 7½ inches.

Present illness began about three weeks ago with cough, especially at night, and progressive weakness. Appetite good until one week ago. Has had no night sweats, no chills, but a chilly feeling when out of the sunshine. No diarrhea or constipation. No digestive disturbance except vomiting following the cough. Frequent urination, particularly during the day time. Has excessive dyspnoea on the slightest exertion. No subjective cardiac trouble. Has had chronic discharge from the ear for the last two years. It seemed to start as a chronic affair. Never complained of pain or tenderness on this side of the head. About three weeks ago had to give up work because of absent-mindedness. About three months ago began to see double at intervals. These intervals have increased in frequency up to the present time. The physical examination I will not record, as it was a clear picture and findings of pulmonary tuberculosis.

Examination December 29, 1905. Pupils dilated and unequal. Respond to light and accommodation. Left dilated more than right. January 3, pupils dilated, left more than right. The assistant says dilated more than three days before. Respond to light and accommodation. Apparently no vision of the right eye. Slight lateral nystagmus. When finger held below the level of the good eye sees double, otherwise normal. No changes in the disc apparent. January 2, 1906, it was noted that the right eye could not be completely closed. The lower lid drooping and the upper lid with little resistance. Facial paralysis of the right side. The lines of the forehead and cheek were obliterated. Mouth drawn to the opposite side. Left side of face slightly flushed and warmer than the right. Neck very rigid. Regarding flexion of spine it moves as a whole. Patient can be raised to the sitting posture without flexion of the spine by the hand behind the head. Patient cries with pain when the neck is forcibly flexed. Head rotated slightly to the left. Reflexes of right arm present and normal. Considerable spasticity; reflexes of left arm normal, no spasticity. Right patella reflex slightly accentuated with spasticity. No marked Oppenheim on the right. Questionable Oppenheim on the left. Questionable Rabinski on both sides. No ankle clonus. No patella clonus. Achilles tendon reflex very slight. Cremaster reflex absent on right, very active on left side. Abdominal reflex not elicited.

Examination of the ear: Discharge of foul smelling pus from the right ear. The posterior superior wall of the meatus was so swollen that it formed an ellipse instead of a circle. The tympanic membrane could not be seen. Some pain on deep pressure over the tip of the mastoid.

Diagnosis: Probable meningitis, with possibility of brain abscess.

January 4, 1906—Patient unconscious for the last twenty-four hours. Paralysis of the opposite side

and partial paralysis of the same side. Radical mastoid operation. Pus under considerable pressure. Mastoid cells full of granulation tissue, and a mass of cholesteatoma. Dura of the middle fossa uncovered very easily. Dura bulged into the operative field so that the edges of the bone could not be seen. No pulsation of the dura. Dura incised. Large quantities of serous fluid escaped. The brain still bulged into the dural wound. Was incised in three different directions. Followed by the escape of considerable serous fluid, which undoubtedly came from the lateral ventricle. There was some question as to the possibility of tubercular meningitis because of the lung tuberculosis. This is of course possible. However, in a case of chronic purulent discharge from the ear with localized pain, facial paralysis, and bulging of the posterior superior wall, all of which speak for pus retention, we must at once assume that such is the case, and deal with it accordingly. This may be tubercular infection of the middle ear and the mastoid cells because it began as a chronic discharge. There was no acute manifestation of an inflammation. This is in accordance with tubercular infection of the ear. On the other hand, he had measles when 17, and it may be that he had had an acute suppurative otitis then and that it had been more or less quiet until two years ago. The finding of the cholesteatoma speaks more for the latter. The man died twelve hours following operation. The microscopical post mortem findings did not reveal any giant cells in the part of the dura, or the brain, that was examined. There was no exudate. From our findings and our lack of findings we must conclude that it was a serous meningitis dependent upon ear infection.

Case 3. By Dr. F. B. Carpenter. L. B., male, age 12 years. When five years of age had scarlet fever, which was complicated by an acute suppurative otitis. Otherwise perfectly well. The ear discharged more or less for the following four years. At times it would completely subside. The ear would remain perfectly dry for three weeks to two months, when he would have more or less pain in the mastoid region which would be followed by a discharge. Sometimes this pain was very slight and sometimes it was distributed to the whole of the temporal bone on this side of the head. During the four years the pain was never severe enough to keep him in bed. Many times with the subsidence of the pain in the discharge from the ear would cease. During the last three years there has not been any discharge from the ear. However, he has had six distinct attacks of fever and pain in the region of the mastoid, tenderness increasing in severity with each attack. They usually last two to four days and the patient is up and about. The present attack is much worse than the former ones. He has not been able to sleep for four days because of pain and tenderness on this side of the head. Temperature 102½, pulse 120. Examination: Right ear normal, left ear stands out from the head more than the right ear. Hot to touch in comparison with the other ear. The whole of the temporal bone sensitive to pressure and extremely so at the tip of the mastoid. Drum membrane entirely destroyed and part of the attic wall. The ear is perfectly dry. An unusual fullness between the inner wall and the attachment of the tympanic membrane posteriorly. Weber in bad ear. Schwabach lengthened. Rinne, right ear positive, about normal. Rinne, left ear negative, lengthened bone conduction, shortened air conduction. Whisper, right ear 30 feet, left ear 4 feet. Immediate operation recommended, which was done the following morning.

Feb. 5, 1907—11:30 a. m. Radical mastoid operation, closing by the panse flap. Large pneumatic mastoid. The attic and antrum were filled with cholesteatomatosus masses. The large and small mastoid cells as well as the cells about the zygoma

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Four of the cases were peri-sinus abscess. Two of this group were further complicated by other cerebral affections and will be reported in full. One case of peri-sinus abscess with granulation tissue on the sinus wall was complicated by a Betzol's abscess. One case of peri-sinus abscess without any other complication. Two of the cases were from acute infections, one of which followed fracture of the base of the skull. The remaining two cases were the result of chronic suppurative otitis.

Two cases of extra-dural abscess were in chronic suppurative otitis. One case had such symptoms that an extra-dural abscess could be suspected, and was found at operation by a small fistulous communication. The other case was accidentally discovered by uncovering the dura in the middle cerebral fossa. Two cases of serous meningitis from chronic suppurative otitis. One case a purulent meningitis from chronic suppurative otitis. Two cases of infectious sinus thrombosis in acute suppurative otitis.

Case 1. Female, aged 21 years. Had ordinary diseases of childhood. Acute suppurative otitis following scarlet fever at the age of 8. The discharge continued uninterrupted for two years. Adenoids were removed and drops were used in the ear, which remained perfectly dry for one year. Since that time the ear has discharged more or less. Examination: Weber in good ear. Schwabach somewhat shortened. Rinne, right ear positive, slightly shortened bone conduction. Rinne, left ear negative, considerably shortened bone conduction, very much shortened air conduction. Right ear whisper 25 feet, left ear, whisper on contact. Acoumeter on contact. Right ear apparently normal. Left ear, caries of the attic wall with a fissure extended into the same. Some granulation tissue about this fissure with the tendency to bleed on manipulation with probe.

Jan. 19, 1905. Radical operation, closing by Körner flap. Posterior wound healed by primary union. On removing the periosteum from the mastoid, the bone showed a dark blue color. This was produced by the carious necrotic mass of the mastoid cells. The outside shell of bone was more porous than under normal conditions. The hammer and incus were almost destroyed by caries. There was a fistula posteriorly and below the facial nerve, which could not be eliminated, as it would have destroyed the facial nerve. However, it was curetted as well as possible by the use of straight and curved curettes. I wish to direct particular attention to this lesion as I consider it wholly responsible for the symptoms that will be recorded later. The wound was dressed every second or third day. The patient complained of so much dizziness, headache and pain on the side of the head that she remained in the hospital for thirty days. I attribute some of the headache to a compound astigmatism which was partially relieved by the continuous use of her glasses. While in the recumbent position she was not dizzy. When she assumed an erect position she would become very dizzy and at one time fell from her chair. This can be accounted for in but two ways, first, that of injury to the semicircular canals at the time of operation; or second, to an infection which I believe most likely took place by way of the fistula which I described before.

Twenty-four hours following operation she was reported by the nurse to be delirious. This happened two or three times in the course of as many days. Complained of headache and soreness about

this side of the head, which gradually subsided. When she began to walk her gait was that of a person with a fractured pelvis. She is a highly sensitive, hysterical woman, and I attributed part of the cerebral manifestations to her mental condition. The eye background was perfectly normal.

March 27, 1905—The ear absolutely dry; hearing unimproved.

May, 1905—Sero pus began to discharge from this fistula and continued until September, 1905, at which time I again performed a curettage. This was treated antisceptically until November, 1905, when she was again discharged as cured.

Since the recovery from her primary operation she has had no cerebral symptoms of any kind.

March 2nd, 1906—Complains of intense headache over this side of the head and dizziness a great deal of the time. The whole of the temporal bone on this side was tender to pressure and the slightest percussion would elicit excruciating pain. At this time there was a serous discharge from this fistula, which in the course of two weeks disappeared entirely. The cerebral symptoms continued with acute exacerbations, at times so severe as to require morphine. Her pulse repeatedly reached 50, full and strong. She had some vomiting, which was probably due to morphin. Examination of the eye, negative. Physical examination, negative.

At repeated consultations operative procedure was recommended by all but one physician, who maintained that it was due to a nervous manifestation.

May 15, 1906—Patient entirely well. Cerebral symptoms entirely gone.

Diagnosis: Serous meningitis: Infection by way of the fistula to the semicircular canals and the aqueductus vestibuli. This will explain the cerebral symptoms that followed the primary operation, as well as the cerebral symptoms that followed in the later infection. During the first infection the cerebral symptoms were scarcely sufficient to warrant further operative procedure, because they seemed to improve almost daily after the second or third day. However, when we are confronted with cerebral symptoms later, and the only possible source of infection is by this fistulous communication, it must be admitted that it was by this route. Furthermore, the patient had an association of cerebral symptoms, such as dizziness, headache and localized pain on the affected side which should always lead you to suspect cerebral complications, especially when all the mastoid cells have been removed. If it is not today, it will be in the near future considered conservative surgery to open and explore.

My diagnosis prior to her recovery was different. At this time I thought she had an extra-dural abscess or brain abscess, with a decided leaning for extra-dural abscess of the posterior brain fossa infection by way of the semi-circular canals and the aqueductus vestibuli. No doubt the infection traveled this route and was of a non-bactericidal invasion. I wish also to call attention to the fact that the fistula, which was discovered at the primary operation, and which has apparently been responsible for the infection that followed, should have been destroyed entirely at the sacrifice of the facial nerve, to remove all possible source of cerebral affections to follow. Or should we trust in Providence, as I did in this particular case, and almost lost my patient?

In this particular case the patient made a recovery without operative interference. This was good luck rather than good judgment on the part of the patient, and I am confident that such cases will not

often repeat themselves. In conclusion, will say that by early operation in cerebral affections you may cut short or eliminate entirely your source of infection, which, on the other hand, if allowed to remain there is but one termination, and that is death, with but an occasional exception such as I have illustrated.

Case 2. E. H., male, 28 years, clerk by occupation. Dr. Rene Bine of San Francisco very kindly furnished me with the medical history of this case, as well as the working out of the various nervous manifestations. Had measles at 17, which were complicated with pleurisy. For two years was in the tropics in good health. On his return to San Francisco 3 years ago had malaria. For the last two years has been about San Francisco, has lost 30 pounds in weight during the last 3 years. Present weight 128. Height 5 feet 7½ inches.

Present illness began about three weeks ago with cough, especially at night, and progressive weakness. Appetite good until one week ago. Has had no night sweats, no chills, but a chilly feeling when out of the sunshine. No diarrhea or constipation. No digestive disturbance except vomiting following the cough. Frequent urination, particularly during the day time. Has excessive dyspnoea on the slightest exertion. No subjective cardiac trouble. Has had chronic discharge from the ear for the last two years. It seemed to start as a chronic affair. Never complained of pain or tenderness on this side of the head. About three weeks ago had to give up work because of absent-mindedness. About three months ago began to see double at intervals. These intervals have increased in frequency up to the present time. The physical examination I will not record, as it was a clear picture and findings of pulmonary tuberculosis.

Examination December 29, 1905. Pupils dilated and unequal. Respond to light and accommodation. Left dilated more than right. January 3, pupils dilated, left more than right. The assistant says dilated more than three days before. Respond to light and accommodation. Apparently no vision of the right eye. Slight lateral nystagmus. When finger held below the level of the good eye sees double, otherwise normal. No changes in the disc apparent. January 2, 1906, it was noted that the right eye could not be completely closed. The lower lid drooping and the upper lid with little resistance. Facial paralysis of the right side. The lines of the forehead and cheek were obliterated. Mouth drawn to the opposite side. Left side of face slightly flushed and warmer than the right. Neck very rigid. Regarding flexion of spine it moves as a whole. Patient can be raised to the sitting posture without flexion of the spine by the hand behind the head. Patient cries with pain when the neck is forcibly flexed. Head rotated slightly to the left. Reflexes of right arm present and normal. Considerable spasticity; reflexes of left arm normal, no spasticity. Right patella reflex slightly accentuated with spasticity. No marked Oppenheim on the right. Questionable Oppenheim on the left. Questionable Rabinski on both sides. No ankle clonus. No patella clonus. Achilles tendon reflex very slight. Cremaster reflex absent on right, very active on left side. Abdominal reflex not elicited.

Examination of the ear: Discharge of foul smelling pus from the right ear. The posterior superior wall of the meatus was so swollen that it formed an ellipse instead of a circle. The tympanic membrane could not be seen. Some pain on deep pressure over the tip of the mastoid.

Diagnosis: Probable meningitis, with possibility of brain abscess.

January 4, 1906—Patient unconscious for the last twenty-four hours. Paralysis of the opposite side

and partial paralysis of the same side. Radical mastoid operation. Pus under considerable pressure. Mastoid cells full of granulation tissue, and a mass of cholesteatoma. Dura of the middle fossa uncovered very easily. Dura bulged into the operative field so that the edges of the bone could not be seen. No pulsation of the dura. Dura incised. Large quantities of serous fluid escaped. The brain still bulged into the dural wound. Was incised in three different directions. Followed by the escape of considerable serous fluid, which undoubtedly came from the lateral ventricle. There was some question as to the possibility of tubercular meningitis because of the lung tuberculosis. This is of course possible. However, in a case of chronic purulent discharge from the ear with localized pain, facial paralysis, and bulging of the posterior superior wall, all of which speak for pus retention, we must at once assume that such is the case, and deal with it accordingly. This may be tubercular infection of the middle ear and the mastoid cells because it began as a chronic discharge. There was no acute manifestation of an inflammation. This is in accordance with tubercular infection of the ear. On the other hand, he had measles when 17, and it may be that he had had an acute suppurative otitis then and that it had been more or less quiet until two years ago. The finding of the cholesteatoma speaks more for the latter. The man died twelve hours following operation. The microscopical post mortem findings did not reveal any giant cells in the part of the dura, or the brain, that was examined. There was no exudate. From our findings and our lack of findings we must conclude that it was a serous meningitis dependent upon ear infection.

Case 3. By Dr. F. B. Carpenter. L. B., male, age 12 years. When five years of age had scarlet fever, which was complicated by an acute suppurative otitis. Otherwise perfectly well. The ear discharged more or less for the following four years. At times it would completely subside. The ear would remain perfectly dry for three weeks to two months, when he would have more or less pain in the mastoid region which would be followed by a discharge. Sometimes this pain was very slight and sometimes it was distributed to the whole of the temporal bone on this side of the head. During the four years the pain was never severe enough to keep him in bed. Many times with the subsidence of the pain in the discharge from the ear would cease. During the last three years there has not been any discharge from the ear. However, he has had six distinct attacks of fever and pain in the region of the mastoid, tenderness increasing in severity with each attack. They usually last two to four days and the patient is up and about. The present attack is much worse than the former ones. He has not been able to sleep for four days because of pain and tenderness on this side of the head. Temperature 102½, pulse 120. Examination: Right ear normal, left ear stands out from the head more than the right ear. Hot to touch in comparison with the other ear. The whole of the temporal bone sensitive to pressure and extremely so at the tip of the mastoid. Drum membrane entirely destroyed and part of the attic wall. The ear is perfectly dry. An unusual fullness between the inner wall and the attachment of the tympanic membrane posteriorly. Weber in bad ear. Schwabach lengthened. Rinne, right ear positive, about normal. Rinne, left ear negative, lengthened bone conduction, shortened air conduction. Whisper, right ear 30 feet, left ear 4 feet. Immediate operation recommended, which was done the following morning.

Feb. 5, 1907—11:30 a. m. Radical mastoid operation, closing by the panse flap. Large pneumatic mastoid. The attic and antrum were filled with cholesteatomatous masses. The large and small mastoid cells as well as the cells about the zygoma

were filled with cholesteatoma. There was but little pus at various places throughout the mastoid. All the cancellous bone was removed. The sinus was accidentally uncovered. Operation completed.

During the afternoon and evening, patient complained considerably of pain on this side of the head, and in the ear. Vomited several times. Temperature dropped to 99.6. The following morning temperature 100.8, pulse 106, respiration 104. Complaining of pain in the ear, and on the whole side of the head. Vomited several times. Evening temperature 100.4, pulse 96 and respiration 24. Second, third and fourth days cerebral symptoms persisted, increasing in severity from day to day. Complains of pain almost constantly, dizziness a great deal of the time. For two nights the pain was so severe that morphine was necessary to keep him quiet. The fourth day the right pupil more dilated than the left reacts to light and accommodation. The papilla of the left eye more injected than the right. White blood count 20,000. Bacteriological examination of pus in mastoid, streptococci. On the evening of the fourth day a second operation was done for purulent meningitis. On exposure of the dura it was found to be red and inflamed. The bone was removed until healthy dura was uncovered. Should say that the uncovered area was somewhat larger than a silver dollar. The dura bulged into the cavity made by the removal of bone, and no pulsation was noted. The dura was incised and at the same time a meningeal vein was cut which gave considerable trouble in ligating, so as to what escaped I am unable to say. A culture was made which proved to be streptococci. After the hemorrhage was stopped the brain pulsation was quite normal, and the operation brought to a close. Salt infusion per rectum administered. The reason the brain was not incised was because it did not protrude, and because there was pulsation.

Vomited some during the night. Did not complain of pain during the night. Pupils normal in the morning.

Fifth day—Temperature, 102.2; pulse, 102; respiration, 24. Complains of pain in the head occasionally. More rational than before operation. Temperature, 100.8; pulse, 72; respiration, 18.

It will be noted that the temperature has increased rather than diminished. All this speaks of further infection. From the fifth day to the eleventh the cerebral symptoms continued to increase. Headache and pain on this side of the head almost constantly. Delirium increasing in severity from day to day, rational at times. Twitching of the muscles of both sides of the face, hands and arms. The following day paralysis of the hands and legs of the opposite side. Nystagmus. Cannot see at all. At intervals rational, when he complains of pain. This condition is increasing in severity, complete paralysis of both sides, complete blindness and no rational moments. Following the second operation the cerebral symptoms were more pronounced. My explanation of this is that the meningeal infection became more aggravated. This case illustrates very well what disastrous results follow in neglected cases. No doubt this boy had meningitis a long time before he was operated upon. His temperature never fell to normal. The lowest was 99.6 the morning following the operation, increasing a few tenths every day, with increasing cerebral symptoms. Had the infection taken place from the operated area the fever would not have appeared so soon. The same is true of all surgical affections. From a misunderstanding, autopsy was not secured.

Case 4. J. C. S., male, 75 years of age. Medical history by Dr. H. C. Moffitt. Father and mother died in old age. Mother died at 70 from malaria. No severe sickness in family. Patient has always been

well. No pneumonia or typhoid. Was in the army and had a sword wound over the left parietal. Has had malaria. Denies specific history. Five months ago had an acute suppurative otitis of the left ear. Has had headache over this side of the head ever since. At times it is very severe. The severe spells come every third day and are increasing in severity. Pain only on this side of the head. Memory failing. Hearing gone in left ear. Pain in left occiput running down neck. Appetite is poor at times due to nausea. Has no vomiting spells. Bowels regular, urine negative. Has noted laryngeal cough from fluid discharged in the pharynx. Has no dizziness. Has lost forty pounds in four months. Tenderness at back of neck when pain is felt. Has had to take morphine constantly for the last two months. No temperature nor chills. Examination: Pale, emaciated, evidently in much pain. Holds head stiff. Can not bend it forward without much pain. Tenderness over the upper three vertebrae. A little swelling a little to the left of the upper three vertebrae as well as back of the mastoid. Most tender between mastoid and vertebrae and on deep pressure is felt a swelling that feels partly periosteal and partly of the soft parts. Along the anterior and the posterior borders of the mastoid are glands dwindling from above downward, the largest the size of a bean, somewhat tender. Pain along left jugular, but no tenderness. Pulse in jugular. Pupils small from morphine, but react to light and accommodation. No nystagmus. Fundus not examined. Skull not tender. No facial nor trigeminous. No change in reflexes. No swelling of vertebrae from the mouth. Examination of nasal pharynx leads to a discharge of considerable quantity of pus.

Probable diagnosis: Extra dural abscess; sarcoma in the posterior fossa; necrosis of the Atlas or a sinus affection.

Ear examination by myself: The ear stands out from the temporal bone more than the ear from the opposite side. This ear is hot in comparison with the ear of the other side. Some swelling of the mastoid, but particularly back of the mastoid. Sensitive over the whole of the mastoid, but especially back of the mastoid. Some pain down the side of the neck. The pus is small in quantity and very offensive. There is decided bulging of the posterior superior wall. A small perforation in the tympanic membrane. Weber in bad ear. Schwabach lengthened. Speech on contact in this ear.

September 15, 1905—Radical operation. Started to do the operation for acute mastoiditis; however, I changed it into a radical operation, because the pathologic findings were so extensive that I thought it could not be thoroughly removed without the latter procedure. Pus under the periosteum. The perforation was near the tip of the mastoid. On removal of bone, pus and granulation tissue welled into the cavity uncovered. The individual cells were largely destroyed and instead a large cavity was present. In curetting away the granulation tissue, I suddenly encountered more pus under considerable tension. After further curettage I was able to demonstrate that this latter pus was in the sinus and separated from the pus in the mastoid by granulation tissue. I curetted the jugular end of the sinus as far as my curette would go and packed with iodoform gauze. The other end of the sinus was nicely sealed and the patient had no symptoms of pus infection, so the clot was not disturbed. The jugular was not ligated for the same reason. The only explanation that can be offered for this is that of a pneumococcus infection. Docent Dr. Alexander of Vienna reports a similar case about two years ago, saying that he had made a thorough search of the literature and was unable to find a similar case on record.

The patient made an uninterrupted recovery. He

did not have any chill, fever, or sweat during his illness.

Case 5. Male, age 33 years, machinist by occupation. Had ordinary diseases of childhood. Has never been ill that he can remember. On January 21, 1907, while slightly under the influence of alcohol, fell, striking the back of his head. Says that he was somewhat dazed for a time and noted that he had a discharge of blood from the right ear. The following day noted a serous discharge from the ear and that it was tinged with blood. Also noted that he could not hear so well from this ear as formerly. Three days following the injury had a chill and some fever. Some pain in the ear and some pain in the mastoid region. This subsided gradually during the course of ten days. He returned to work for a short time, when he again had pain and tenderness back of the ear. Stopped work for three or four days and then again felt quite well. This fever, pain and tenderness has continued interruptedly for the last six weeks. Three days following the accident, pus began to discharge from the ear and it has continued up to the present time and is of a very offensive odor. There has always been more or less pain confined to this side of the head, at times much more intense. Of late the pain is increasing in severity and occurring more frequently. For some days past, says he has had fever. No chills or chilly sensations. Ear examination: No swelling of the soft parts about the mastoid. No increased surface temperature. Slight tenderness over the whole of the temporal bone. Very sensitive over the tip of the mastoid. There is an offensive discharge from the small perforation below the end of the hammer. The tympanic membrane was bulging to such an extent that the landmarks were completely obliterated. The bulging of the posterior superior wall was so marked that it helped to obliterate the membrane. Temperature 102.5, pulse 110. Operation recommended.

As the following day was Sunday we did not operate until Monday, his temperature remaining at near 103 the whole of the time.

Acute mastoid operation. Nothing of note on removal of the periosteum. After removing the outer shell of the mastoid a blood clot was found that was partly broken down and intermingled with pus. The clot began just back of the posterior osseous wall of the meatus, extending horizontally across the mastoid to the wall of the sigmoid sinus. On removal of the blood clot, granulations, tissue and pus, the fracture could be traced through the posterior osseous wall of the meatus, crossing the mastoid, fracturing and uplifting that part of the mastoid that covers the sinus; between the sinus and the broken bone there was pus and new organized connective tissue covering part of the sinus wall. The sinus was uncovered until it appeared perfectly healthy. There was pulsation in the sinus and it was compressible. The balance of the mastoid cells and the cancellous tissue was removed and the antrum opened freely and operation completed.

As will be noted from the temperature chart, the temperature did not drop as was expected. Wound dressed the second day following operation. No pus in the external meatus. Everything looking well in the mastoid wound. The third day the temperature remained about the same. I decided that the sinus should be explored the following morning. When I called on the fourth day the temperature had fallen considerably and the patient was feeling comfortable. I decided to postpone further operative procedure. In less than half an hour following my visit the patient had a chill and the temperature went to 104, as you will see by the temperature chart. This temperature chart illustrates very beautifully the rise and the fall of the

temperature, with the chills and the perspiration that followed. During the fifth day the patient began to experience pain in the right knee, which was bandaged and hot applications applied. The following day, six days after first operation, I decided to open the sinus. The new granulation tissue was curetted away, all parts made clean as possible; pulsation could be felt in the sinus. Besides, it was compressible. There was no pain along the jugular at any time. The lateral sinus was freely incised. The jugular end of the sinus did not bleed as much as the other end. At any rate I concluded that there was a partial thrombus and I curetted and packed with iodoform gauze. The distal end was plugged without curettement. The jugular was ligated and the operation completed. The following day the patient had a chill and temperature of 104. The same day the knee was punctured and the secretion showed to contain a pure culture of streptococcus. The knee was freely opened the same day. There was considerable bloody pus found. You will note from the temperature chart the decided fall that followed this operation. You note another rise in the temperature chart about two days following this knee operation. I account for this by the fact that the mastoid wound had not been dressed for three days. You also note in the temperature chart that there was a gradual fall following this dressing.

Dr. Alvaris has done some bacteriological work for me on this case, of which I wish to speak and has furnished me with the following data: Jarueth and others have recently been studying the polymorphonuclear neutrophiles and find that the number of nuclei vary considerably under different conditions and in different diseases. There are five classes of cells with one, two, three, four and five nuclei respectively; the percentage of the classes and the average number of nuclei to a cell vary. Normally the count varies only slightly from the following:

I	II	III	IV	V
5	35	41	17	2

Average number per cell, 2.76.

The polymorphonuclear neutrophiles are supposed to develop from a small myelonotic cell with single oval nucleus. A few of these are normally found in the blood. The older the cell presumably the more nuclei it has, and the older cells are supposed to be most active in the phagocytosis. If this be true, a large percentage of multinucleate cells would give a good prognosis, as the person should be more resistant to infections. This seems to be borne out clinically, but an immense amount of research must yet be done. A bad prognosis might have been given in Dr. Welty's case with pus and streptococci in the knee joints, but the differential neutrophile count showed the following percentages:

I	II	III	IV	V
4	24	34	25	13

Average number, 3.19.

As the average number seldom goes over three, the prognosis for this count was good. This was borne out subsequently. Probably the circulating streptococci had been destroyed very quickly.

REPORT OF A SUCCESSFUL SUTURING OF A DOUBLE STAB WOUND OF THE FEMORAL ARTERY, AND A SINGLE WOUND OF THE FEMORAL VEIN.

By HARRY M. SHERMAN, A. M., M. D., San Francisco.

On the 17th of June that patient, a 16-year-old youth, sitting in school, dropped a sharp pocketknife between his legs. To prevent its falling to the floor he brought his legs suddenly together, with the result that the sharp, narrow blade penetrated deeply into the inner side of the left thigh a little below its middle. Blood at once soaked through his trousers. He left school and had his wound dressed immediately by a surgeon. Later, pain and swelling supervening, he consulted me. I found a small stab wound and a uniformly swollen thigh; I applied a snug bandage and ordered rest in bed. He had some elevation of temperature without a leucocytosis that night, and I put hot water bags around his limb and continued the rest two days longer. The hemorrhage I supposed to be venous and believed it would stop under rest and pressure. When I saw him again on the fourth day, the signs of traumatic aneurism were evident, a thrill and a bruit, and the patient was sent immediately to the University of California Hospital for operation.

Surgical condition.—About the junction of the anterior and medial surfaces of left thigh at about the middle, is a wound 0.5 cm. long, now well closed. There is considerable ecchynosis of surrounding skin. The swelling is not large, but is hard and limited to the immediate neighborhood of the wound. Very marked pulsation and thrill are felt, limited to an area scarcely larger than a silver dollar. Over this, and up and down the femoral artery a very loud bruit is heard. The pulse is easily felt in the posterior tibial artery. There are no apparent circulatory changes in the affected leg or foot; no engorgement of veins, no oedema and no temperature change. The general condition of patient is good.

Operation.—June 25, 1907, the anesthetic was started with chloroform and changed to ether. An elastic tourniquet was applied around the uppermost part of the thigh for hemostasis. An incision was made over the aneurism, the sartorius was pulled inward, and Hunter's canal was entered through its roof. In this incision no muscles were cut. It was found that the knife blade had entered the front portion of the artery at an angle, making an opening some 8 mm. long; at a distance of a millimeter it had passed out of the artery, making another similar opening; it had then entered a large adjacent vein (presumably the femoral), making an opening about 5 mm. long. The vein was first repaired with intima-to-intima continuous suture of fine silk. The small bit of artery wall, not more than 1 mm. wide, intervening between the two wounds in the artery, was excised, and the edges of the then single wound were brought together by intima-to-intima continuous silk suture. In each case all the coats of the vessel were included in the sutures. On releasing the tourniquet there was no hemorrhage along the sutures. Without especially repairing the roof of Hunter's canal the muscles were brought together, and the fascia and skin closed in layers by catgut; the skin by the subcuticular stitch. A small drain of twisted rubber tissue was left in the middle of the wound. Dressings of dry gauze were applied, and the limb immobilized by a plaster of paris spica from foot to waist.

There is one thing to be said about the little millimetre wide strip of arterial wall between the two wounds. No suture could have been put in it. If I had sutured over it, leaving the strip in the lumen, I should have left a certain roughness and irregularity of the wall at that place, which would have in-

vited clot formation. There seemed to be no good reason for suturing underneath it and so complicating the manipulation, and it was so narrow that its loss could only contract the vessel's diameter 0.3 mm., an unappreciable amount. Therefore I clipped it out.

The patient came out from the anesthetic well with almost no nausea. Small doses of morphia were necessary for some pain in the thigh. The first dressing, seventeen days after the operation, found primary union except in the skin, and that the subcuticular suture was not absorbed. It was removed and alcohol gauze dressing put on. The splint was not disturbed and the patient was permitted to be up in a wheel chair.

The splint was taken off twenty-two days after the operation and the patient restricted to bed again. The wound was healed and a little crust lay along suture line. On examination I found (1) no bruit at the point of suture of the vessels, (2) synchronous pulses in both posterior tibial arteries, (3) the blood pressure in the right leg 115 mm. Hg., in the left leg (the side of the operation) 110 mm. Hg., a difference of 5 mm. Hg. The artery I believed to be clear and patent. The vein might still have a thrombus on its walls according to an experiment detailed in the Johns Hopkins' Hospital Bulletin of May, 1907, p. 153 et seq. (experiment 39, p. 175), therefore I decided to keep this patient in bed to complete full twenty-six days. Thirty days after the operation he was discharged well.

Postscript—four weeks after leaving the hospital—He is still well.

When I first saw this young man I found no interference with the arterial circulation, distal to his wound, and I supposed he had wounded his femoral vein and had had a fairly free hemorrhage into the tissues of the thigh which would account for the general swelling. There was no palpable thrill and I did not think of auscultating the region. Four days later, when I first felt the thrill, it was unmistakable and I am quite sure could not have been missed by anyone. The question at once arises, though I can not answer it, as to whether I might have made an earlier diagnosis had I auscultated. Next time I surely shall do so.

Some years ago I tore the axillary vein in removing the glands during a Halstead operation for carcinoma of the mamma and sutured the wound, intima-to-intima, with a satisfactory result. Sometimes I have put lateral ligatures on the internal jugular vein when I have been clumsy enough to tear a hole in it, and fortunate enough not to tear a hole too big to be thus managed. If the hole was too large for a lateral ligature, I have doubly ligated the vein above and below the wound, and all of these cases have done well. I have never sutured an internal jugular vein. The case reported tonight is the first instance in which I have had the opportunity of treating a wound in an artery.

Fortunately for my patient, the papers of Carrel in the Bulletin of the Johns Hopkins' Hospital for January, 1907, and that of Stephen H. Watts, in the same publication for May, had come and had attracted me, so that the approved technic was known.

This latter paper has been, in large part, reprinted in the September number of the Annals of Surgery, and with it are seven other papers on the Surgery of the Vascular System. With all this recent literature in the hands of the majority of you, it is unnecessary for me to make any but brief quotations.

The matter of temporary hemostasis, during the manipulation of the artery is important, for it should be absolute and yet entail no injury to the intima. Hemostats and all purely metallic clamps are forbidden; clamps with smooth blades protected by rubber-

and adjustable by a screw are permissible. Those whose experience is the greatest in experimental and surgical work say that finger pressure is the best for the artery. In experimental work the larger arteries have been, of course, the ones selected, such as the axillary or the femoral or the aorta, and most of the work on man has been on the common femoral and the axillary arteries. This precludes, in most instances at any rate, the use of an elastic tourniquet; but in all work so situated that an elastic tourniquet can properly be applied proximal to the operation field, I am of the opinion that it will be found to be the hemostatic method of choice. It did its work perfectly in my patient's case. In other situations I should select Crile's artery clamps or their equivalent, even though a finger might be preferred by some. Clamps do not get tired, and to have to hurry the suture because the assistant's finger was wearying would mean a badly placed suture, and that would quite surely mean failure from leakage or thrombosis.

I am struck, next, by the story of the evolution of the suture method as it is told in Watts's paper. From the first the management of the intima of artery and vein has been the debatable point. Reading the protocols of experimental and surgical work one must be impressed by the high percentage of failures due to thrombosis, and the chief endeavor was to prevent this. Beginning in 1889, according to Watts's paper, Jassinowsky experimented on arteriorrhaphy using silk, interrupted sutures, and not penetrating the intima. The next year Burci used the continuous instead of the interrupted suture, and no one has since reverted to the latter. In 1894 Heidenhain used a continuous catgut suture which penetrated the intima, but the method was unsuccessful. In 1899 Dorfler used a continuous silk intima-penetrating suture and this has since been the method of choice. Of course silk permits the use of finer filaments and finer needles without sacrificing strength, and so commends itself at once as the most suitable material. According to the reported experiments and the reported instances of its use in surgery in man, the vein and the artery were to be treated on the same plan.

Carrel has added another point, and one of importance, though I have to acknowledge that I did not, in my case, make use of it. He boils his silk in vaseline and places his suture, while it is heavily saturated and covered with this unguent. This makes the minute portion of the stitch which is exposed to the blood stream repellent to, rather than absorptive of the blood serum and materially lessens the chances of thrombosis. It is a detail which has rendered possible some very remarkable experiments in the anastomosing of arteries to veins, and veins to arteries, end to end and end to sides, as well as the total transplantation of organs and the replantation, partially successful, of an amputated limb.

What has been said here refers strictly to the method of placing a suture which it to unite cut blood vessel walls, whether it be for closing a relatively small wound, as a lateral suture, or for uniting a wholly divided vessel as a circular suture. Distinct from this purely suture plan is Murphy's invagination method, applicable, of course, only to wholly divided vessels. It has been successful in Murphy's own case and the two cases of Djemil Pascha, all surgical cases in man, but it seems hardly right for me, with no personal experience of circular sutures, to discuss either this or the prosthetic methods of Abbe, Payer and others. For these points I refer you to Watt's paper or to the original reports.

Two other points are leakage and thrombus formation, and either may invalidate a suture. Of the

former it is usually said that a slight hemorrhage between stitches will cease after a few moments of gentle pressure or the placing of one or two interrupted sutures. It happened thus in the suture of the femoral vein in my patient, there was a slight hemorrhage which ceased after a little sponge pressure. In view of the danger of thrombus formation, I should fear any clot formation, and of course the ideal suture should be mechanically "water tight" with no need for clotting to cork the cracks. The ideal suture, however, can not be attained, because sutures pulled tight enough to make the line of union water tight would cause necrosis of the tissue in the bight of the suture. There must be some clotting it seems to me, to cork minute cracks, else there would always be leakage, for the vessel's function must be resumed at once, there can be no period of enjoined rest as after enterorrhaphy to permit sealing by adhesive process. The difficulty in making mechanically a primarily water tight suture is seen where we attempt to close the wound after removing the tumor of a spine bifida. A certain amount of leakage is the rule until adhesion of wound surfaces has taken place; and anyone who has, by unhappy chance, operated on a hemophiliac, as I once did, will always thereafter have a very just appreciation of the part clotting plays in stopping the hemorrhage from even the smallest wounds.

Thrombus formation is still the chief obstacle in the way of successful work. It has stultified more than 50% of all the recorded operations, experimental and surgical. Carrel refers it to infection. He says: "A rigid asepsis is absolutely essential for success. It seems that the degree of asepsis under which general surgical operations can successfully be performed may be insufficient for good results in vascular operations. Generally, it is considered that a wound is aseptic when it does not suppurate, and when healing occurs 'per primam intentionem.' But it should be remembered that this clinical asepsis is far from the ideal condition of absolute asepsis. Between absolute asepsis and infection, which is evidenced by the ordinary symptoms of inflammation, there are many intermediate degrees of attenuated infection. It is certain that every surgical wound, though clinically aseptic, is more or less infected. This infection may not be accompanied by the classical symptoms of inflammation; or if these phenomena are present, they may escape detection. The tissues unite 'per primam intentionem,' and from a clinical standpoint all the reparative processes occur as if the wound were really aseptic. But it is very probable that the more marked degree of these slight infections may be sufficient to cause thrombosis and that in order to obtain constant good results in blood vessel surgery the degree of asepsis must be higher than in general surgery."

Watts agrees with this view, but neither he nor Carrel offers any cultural proofs of infection, and in fact, merely give their opinions. The question very naturally arises as to how quickly infection can determine clot formation. Francis T. Stewart, in the number referred to of the Annals of Surgery, reports a case of arteriotomy for thrombosis and embolism, and after the first clot, due to a contusion of the artery, had been displaced, another re-formed after the vessel had been closed by suture and before the skin could be sutured. He reopened the artery, removed the second clot and again closed the artery, only to have another thrombus form at once. It is difficult to refer this to bacterial action and perhaps it is not necessary, for the trauma to the intima had been sufficient to cause a thrombosis before the vessel was opened at all, so that the second and third clots might have been due to the same cause as the first.

J. Edwin Sweet, in the same journal, doubts that

bacteria can cause the immediate clot formation so often seen and is inclined to refer it to the tissue coagulins of the vessel walls, which gain access to the blood through the needle holes. This explanation appeals to me more than the infection etiology for the early or immediate thrombi, and probably each explanation, in the appropriate time and place is true, the common coagulation-causing-substances producing the immediate and infection the later thrombi.

Be that as it may, the great obstacle to much attractive and beneficial surgery is the thrombus and even though it seems, from Carrel's latest reports, that his final technic almost obviates the danger, we must remember that this is in the hands of a man especially expert at this particular work, while what we want is a technic that will make arteriorrhaphy any surgeon's operation, as appendectomy has come to be. At present the high percentage of failures limits the procedure to traumatic cases in which an artery is cut almost or wholly across, when a surgeon can choose between an attempt at suture and ligation. The number of operators who will deliberately open a vessel to remove a thrombus is small; the chances should be better if the obstacle to the circulation was an embolus and if an early diagnosis can be made this might prove, in peripheral arteries, a feasible procedure in the hands of many; while until the technic has been improved the transplantation of vessels and viscera will probably have to be denied to man and limited to the lower animals.

RHEUMATISM IN CHILDREN.*

By MILLICENT COSGRAVE, M. D., San Francisco.

During the past three years in the children's clinic, it has been my good fortune to observe a number of cases of rheumatism in children, and to note the various aspects under which this disease presents itself. So much so that at the present time the simplest case receives attention, while all cases of tonsillitis, growing pains and chorea are viewed with suspicion, their history taken in detail and a physical examination made.

Rheumatism manifests itself in children very differently from what it does in adults, not alone by arthritis but by tonsillitis, chorea, endocarditis and myocarditis with acute or subacute symptoms such as "growing pains," stiffness of joints, etc.

The history of rheumatism has received a tremendous amount of attention during the past years and is still a matter of dispute; many English writers regard the lesions as due to chemical substances. Fuller thought lactic acid the cause. The uric acid theory has always had followers while others believe that putrefactive substances absorbed from the intestine cause the disease. Cole of Johns Hopkins, Poynton and Payne of London, Wasserman and Friedlander of Germany, and many others considered the evidence of these views insufficient and the bacteriological theory was suggested.

The cause of an attack, the tendency to spontaneous recovery, the multiplicity of the lesions, all led to the view that acute articular rheumatism is infectious in origin. Evidence as to the possibility of contagion is not wanting. Jossereau of Paris believed this and Friedlander of Leipsic went

so far as to isolate cases. However, there is no evidence of direct contagion to support this view.

Cole of Johns Hopkins examined thirty cases of rheumatic fever and no germs were found in any case. He states that in his opinion the cause of the disease has not been discovered and that it may be:

First.—A specific infectious disease, the cause of which is unknown, and the cocci a secondary invasion.

Second.—That there is no disease such as we call acute articular rheumatism. What we call acute articular rheumatism is a mild or moderate disease of strepto-coccus origin or that acute articular rheumatism is due to a form of strepto-coccus that has not yet been differentiated from strepto-coccus pyogenes.

Beattie, in the March number of the *Journal of Experimental Medicine*, has a different point of view. He believes and introduces a series of experiments to prove that the diplococcus isolated by Wasserman in Germany, Poynton, Payne, and himself in Britain is the direct cause of acute articular rheumatism. To support this view, he evidences his results in a series of rabbits which he inoculated with strepto-coccus pyogenes and the micrococcus rheumaticus.

He also states that they were able to cultivate the microbes outside of the patient's body and to inoculate monkeys and rabbits, producing polyarthritis and endocarditis and other manifestations of rheumatic fever. The organism was thought to be terminal, but he produced it from patients not severely ill. Again, cultures taken at post mortems from blood of patients suffering from rheumatic fever was sterile, whereas those taken from synovial membranes showed the presence of the diplococcus.

He inoculated one series of rabbits with streptococcus and invariably obtained pus; another series with micrococcus rheumaticus and never obtained pus. In both instances he got articular symptoms, in one, endocarditis. In cases inoculated with strepto-coccus he obtained germs from blood, in cases with micrococcus, never.

His conclusions are that results from inoculations with streptococcus are different from those of micrococcus rheumaticus; that micrococcus streptococcus, nor acute articular rheumatism as an attenuated streptococcal pyemia. In uncomplicated cases of acute rheumatism, the germ is not found in blood or joint exudates.

Holt believes that hereditary tendency plays a large part as the logical factor, and states that in two hundred of his cases a rheumatic family history was obtained. In my cases I find it extremely difficult to obtain any trace of hereditary influence, for as a rule the mothers deny all trace of disease in their family, which even the closest questioning fails to change, and insist all their people are healthy. Of their husband's family they usually and rather scornfully deny any knowledge or if they do tell of anything it is negative. In private practice in all my cases, a family history of some form of rheumatism has always been obtained.

*Read before the Cooper College Science Club.

My cases divide rheumatism into series.

First. Those who come to the clinic suffering from acute articular rheumatism with enlarged joints.

Second. Those suffering from chorea.

Third. Those with tonsillitis.

Fourth. Endocarditis.

First, articular rheumatism: Rebecca Atkins, age nine years, brought to clinic complaining of rheumatism. Family history negative. Two other children living and well. Contagious diseases: Has had chick-en-pox and tonsilitis frequently. Present illness: Has had rheumatism for past six weeks. First, knee was swollen, then shoulder, now both hands. Has no appetite, can not sleep, has eaten nothing solid nor sweet since illness commenced. Physical examination: Child very much emaciated, throat clean, heart no murmur, no enlargement, accentuation of first sound, pulse rapid, but regular. Temperature, 97.6°. Respiration normal. Hands are very red and swollen. Right hand in particular. Child screams when hand is touched.

Treatment: Hands are covered with oil of winter-green, done up in cotton, and bandaged. Tr. salicylates.

Child lived in Berkeley and did not return to the clinic, but sent a report that she was better.

Second Case. Hannah Sautell, age twelve years, complains of rheumatism. Family history excellent, four other children living and well. Contagious diseases: Whooping cough at five years, measles and mumps at six. Other illnesses At six months had attack of rheumatism in legs, cried when touched, has had it every winter since then. Had it a week ago in shoulder which was slightly swollen. When she has it in winter has very bad fever, and limbs swell greatly.

Present illness: Has pain over precordium whenever walks quickly, loses breath, is very nervous and irritable, appetite is good, sleeps well, bowels regular. Child is fairly well nourished, throat normal, lungs normal, heart has loud systolic murmur reflected to axilla.

Treatment: Liquor Potass. Arsenitis. Oil Gaultheria in Glycerine. Child came back to clinic in a week saying that she was much improved. Pain has disappeared.

Third case. Christine Sylvester, age seven years. Family history, paternal side, cancer. Maternal side, normal. Seven other children. Infectious diseases: Measles, mumps and whooping cough. Other illnesses: Is subject to rheumatism. Had attack of acute articular four months ago, in legs, arms and back. Has been complaining of pain in limbs and over heart. Child is very thin, anemic and poorly nourished. Throat, nose and lungs, normal. Heart enlarged to left apex, Mitral murmur all over heart, but best heard at apex. On right heel is a painful spot, heel is edematous. Temperature not increased. Treatment: Rest in bed, ice bag above heart. Oil Gaultheria, Tinct. Digitalis, Olive oil, lemonade without sugar, ad. lib.

The chorea cases were much more interesting, in that they were kept under observation for a longer period of time, the others not returning to the clinic after they were better and being lost sight of.

Second series chorea. Sophie Graham, age twelve years, American. Entered September 10, 1905. Family history: Father died of cancer at 36. Mother living and well. Infectious diseases: Whooping cough. Other illnesses: Chills and fever at two years. Inflammatory rheumatism at eight years, pain and swelling in limbs for a week. This was followed by St. Vitus' dance, which was limited to face and hands. Came to California from New York two years ago. Last winter had very severe attack

of inflammatory rheumatism. Was in bed till April 29. Immediately chorea started in. Present illness: Child's mother noticed twitching of hands, then hands started to shake, this was followed by shaking and twitching of whole body.

Child is tall and strong looking, exceedingly well developed. Face twitches, tongue trembles. Reflexes all right. Lungs normal, a systolic murmur heard best at apex, faintly heard at base. Can hold still but wriggles and makes faces when not noticed; has marked difficulty in remaining still.

Treatment: Rest in bed, milk diet. Liquor Potass. Arsenitis. Oil Gaultheria.

15/9/05. Child much improved, can sit still easily, very little twitching; 30/9/05, child not as well, took overdose of arsenic; 15/10/05, child better.

Since then have heard from child and there has been no return of symptoms.

Rose Henzi, age fourteen years. Paternal history: Cancer. Maternal history: Tuberculosis. Infectious diseases: Measles, whooping cough, and tonsillitis frequently. Other diseases, rheumatism frequently in knee which was swollen and painful last winter.

Present illness: Child has been suffering past two weeks. Has pains in bones, suffers from dizziness, sleeps restlessly. Child well nourished, no nystagmus, eyes o. k., tongue is coated and trembles. Glands about neck ant. and post. cervical and anterior maxillary palpable. Lungs normal. Heart, pulsation over chest, no murmur. Heart slightly irregular in rhythm, bounding and slight accentuation of second sound. Pulsation also observed in carotids. Slight twitching of face and upper extremities.

Treatment: Liquor Potass. Arsenitis.

Frank Delcanio, age seven years, brought to clinic November 16, 1904, suffering from chorea. Father and mother living. Father very nervous. Mother well. Three sisters living, all subject to tonsillitis; one brother who has had two very bad attacks of inflammatory rheumatism and has endocarditis.

Infectious diseases: Measles, chicken pox, whooping cough, also tonsillitis. Has never had rheumatism, but has had growing pains.

Present illness: Was very badly frightened and afterwards began to twitch. Now can not stay in bed, can not sit in chair. Face, arms, legs twitch and can not be controlled. Heart very rapid, no murmur. Difficult of examination on account of uncontrollable twitching. Arms move wildly about, is very irritable.

Treatment: Put to bed on milk diet. Liquor Potass. Asenitis. Oil Gaultheria.

November 19, 1904. Three days later child worse, can not stay in bed, given chloral and bromide. Heart very rapid and bounding, eyes moving constantly. Fowler's solution continued.

November 20, child is a little quieter; November 25, child lies quietly but still twitches; December 1, child better; February 2, child still nervous and irritable, but better; February 13, child much better but wild; July 3, child again has chorea, also tonsils are red and swollen. Heart o. k.; July 6, child very restless, given Sod. Brom.; January, 1907, child again choreic; given arsenic; February, 1907; child is much better.

This has been a most interesting case throughout, being under observation constantly for two years and a half. Has varied forms of rheumatism. I also saw the elder boy who has had two very serious attacks of acute articular rheumatism with endocarditis, broken compensation and dilatation accompanied the first attack I saw and later he came to the medical clinic with a real *cor bovis*. Since last

year he has been in San Leandro and is much improved.

Mary Bertucci, aged nine years. Chorea. Mother and father living and well. Two other children living and well.

No infectious diseases. Other illnesses: Has had pain in legs. Brought to clinic for nervousness. Has pain and swelling in arm and legs. Child has all facies of chorea, has also a very stiff elbow joint, can not move arm from elbow, moves from shoulder. Moves continuously and twitches, can not touch nose with finger.

Treatment: Told to go to bed and be on milk and soup diet. No wine or coffee. Oil Gaultheria. Fowler's solution.

Child steadily improved. In six weeks arm moved normally.

Tonsillitis cases were not so numerous.

Dora De Rudue, came to clinic suffering from sore throat. Tonsils reddened, heart rapid, temperature 100. That afternoon was called to house, found child very restless and nervous. Temperature 102, heart rapid and bounding, no murmur, pulse 160. Next day child improved but pulse still 140. Next day throat symptoms entirely disappeared, heart rapid and pulse 140. Brought to clinic the following Friday, pulse weak and rapid, no murmur but irregular rhythm. Child comes to clinic once a week and is steadily improving.

Charles C., was taken ill with tonsillitis on Sunday; on Tuesday ankle very much swollen; on Thursday shoulder swollen and reddened. Heart rapid and flabby. Temperature 102, pulse 116. Went through regular attack of articular rheumatism.

Edna S., recurrent attacks of tonsillitis, always followed by swelling of joints.

We have had cases of purpura rheumatica and subcutaneous tendinous nodules in the children's clinic, but before my time.

Rheumatism in children is frequently overlooked on account of the indefiniteness of symptoms—instead of the acute abrupt onset as in adults, we frequently simply have pains in legs which are called by the mother "growing pains," an occasional swollen joint that is ascribed to a traumatism. Rheumatism is rarely dangerous to life, but very frequently interferes with usefulness on account of the cardiac complications. It rarely occurs but once and each renewed attack leaves the heart in a more weakened condition.

In summing up it seems to me that following the onset and the symptoms in these cases one can hardly doubt the specific infectious nature of the disease. The frequent ushering in by tonsillitis, the endocarditis, and polyarthritis following in some cases, the chorea in others, all point to a germ invasion. As to whether Cole and his followers are right in ascribing it to a pyemia or Beattie to a micrococcus rheumaticus remains for further study to prove. We all know that inoculations of streptococcus pyogenes are followed by articular symptoms and that both cases i. e. inoculations of streptococcus are followed by production of formic acid.

In the case of the micrococcus, Beattie states the quantity of formic acid found is large, that of strepto-coccus while present, is found in small quantity.

A FEW NOTES ON CLINICS FOR DISEASES OF THE SKIN.

By DOUGLASS W. MONTGOMERY, M. D.

The following cursory notes written for my own pleasure while on a short trip, have no pretension to being at all exhaustive. They may, however, interest my friends for a few minutes, and if so they will serve their purpose.

Before boarding the steamer at New York to cross the Atlantic I called on Dr. J. A. Fordyce, who kindly invited me to see his service in the City Hospital. The City Hospital turned out to be what I knew twenty years ago as Charity Hospital, and it was explained to me that it hurt the patients' feelings to be treated in an institution called a "Charity Hospital," so the name was changed. How pleasant it is to feel that even such patients have some recollections of what self-respect is, and, as if in accentuation of this mental attitude, the first patient seen had pediculosis corporis. Lice had so long pastured on his body that indelible traces were left, as extensive areas of pigmentation. Throughout these areas there were many light colored spots having superficially the appearance of scars. The pigmentation was particularly deep in the flexures. The interest of the case lay in a decided and recent loss of flesh, marked anemia with eosinophilia, and some chloasma spots on the cheeks. The deep pigmentation alone has often led these cases to be mistaken for Addison's disease, and when one gets in addition, as in this case, rapid loss of flesh, anemia and pigmentation of the checks the chances for error become so imminent as to be interesting.

In this patient the rapid loss of flesh had produced a curious change in the skin of his abdomen, that was shrivelled and puckered up like an old empty leather bag, a fitting emblem of the man's diminished fortunes. It may be, however, that the creepy beasties this man had had in his clothes had really been a dispensation of Providence, acting in the way referred to by David Harum in speaking of fleas, namely that a certain number of fleas is good for a dog, as they keep him from brooding and reflecting on the fact that he is a dog. In this view this was but another illustration of Emerson's doctrine of compensations.

The next patient Dr. Fordyce showed me was a young fellow afflicted with eczema scroti. The word "afflicted" is perfectly applicable in this disease, for the patient is scourged, whipped and stung by his malady. In addition to this exquisite torture the affection is apt to be obstinate, and under such circumstances relief may be awaited, though not patiently. In the instance under consideration there was a hard thickened scaly patch with much itching on the front of the bag. Considerable amelioration had been obtained by a course of lotions of resorcin gradually increasing in strength from ten to thirty per cent. till a decided inflammatory reaction was secured. Then the part was treated with a calming lotion till the inflammation subsided. It was a variety of the old principle of arousing enough inflammation to carry away with the accelerated and

increased lymph stream the old inflammatory induration. The patient himself, was so pleased with the result of the first course of treatment, that he wished immediately to enter upon another.

After leaving New York, and enjoying an uneventful voyage across the Atlantic, we landed at Bremen and went on to Hamburg. In Hamburg I had the pleasure of visiting the large venereal service in the general hospital, the Hospital of St. George, with Dr. Arning. This institution is admirably outfitted. Of syphilis alone, about seven thousand cases are treated annually. Other than the venereal diseases, however, I saw only a few instances of psoriasis, one widespread lupus, and one pityriasis rosea. The service is what one might call monotonously depraved. Dr. Arning was employing a new treatment for chancroid. Every one is aware how tantalizing the treatment of these ulcers is. They may be sluggish in healing, or new ulcers may break out; or even when healed it is not infrequent for the scar to break down, and the work has to be done over again. Dr. Arning finds that by treating the ulcer with a hot jet of permanganate of potash, he gets a rapid solid healing without breaking down. This clinic should be an excellent one in which to study syphilis. The material is abundant, Dr. Arning is energetic, and the pathological department is well outfitted.

It was while in Hamburg that an incident occurred that made me especially proud of San Francisco. I was telling an acquaintance of a mutual acquaintance in San Francisco whose course in a certain transaction had not met with general approval. "Oh," he said, "he is just like all of you out there." For a few minutes I was rather taken aback by his naive impoliteness, but keeping my temper I said: "You ought to have seen the way our local fire insurance companies met their obligations." I then told him that there were two local fire insurance companies in San Francisco, the stock of which was mostly owned within the city. The stockholders therefore lost, not alone through their fire insurance stock, but shared with others in the general calamity. I said the California Fire Insurance Company paid its obligations in full as soon as the losses could be determined. I also told him that the other company, The Fireman's Fund, lost more than ten millions of dollars; that its vaults did not hold, and that all their books were burned, thereby destroying evidence of either debits or credits; that they, however, reincorporated, found what they owed and paid in cash, at first fifty per cent. of their losses, then six per cent. and gave stock for the rest, and that the stock today is excellent. I said further that those who had insured in The Fireman's Fund have already received about seventy-five per cent. of the face value of their policies and that they would ultimately be paid in full. While I was speaking my acquaintance was looking into a microscope. As I proceeded with my recital I could see his eyebrows rise slightly, his eyes open a little and his lips part as indicating involuntary surprise, and he said in a low tone, "How did they do it? We couldn't." Until then I did not appreciate what a

shot I had landed. I simply said: "You probably have no conception of the financial strength of that city, nor of the integrity of the better class of her merchants."

This resurgence of The Fireman's Fund is as gallant a piece of work as has ever been accomplished in commercial life.

From Hamburg we went to Copenhagen, and there I met one of the most amiable characters it has been my good fortune to encounter, Professor Erick Pontoppidan. He has a large and interesting clinic for venereal diseases at the Vestre Hospital, where I spent a very enjoyable and instructive morning, heightened by the fact that the Doctor speaks English fluently, having lived a long time in the Danish West Indies, where practically nothing but English is spoken.

Doctor Pontoppidan told me that the compulsory examination of prostitutes, after being tried in Copenhagen for some time, had been abandoned. This step was partly owing to the efforts of people opposed to all such examinations, and partly to the fact that no examination no matter how thorough, will enable a physician to give a certificate to a public woman that she is not liable to convey disease through sexual congress. In this clinic I saw an astonishing number of instances of the pigmentary syphilide in the usual situation, as a collar about the neck. In my own practice I see very little of this particular syphilide. This is undoubtedly due to the fact that I see very little of early syphilis in females, of which the pigmentary syphilide is a symptom. Outside of prostitutes, most women who get syphilis acquire it from their husbands. As it is to the husband's interest to conceal the disease from his wife, it is either neglected or entirely overlooked in its early stages, and so it comes about that the specialist for diseases of the skin, in his private practice, sees most of the cases of syphilis in the female in the latter stages of the disease, after the pigmentary syphilide has long since faded away.

Dr. Rasch of Copenhagen has an excellent service in the Commune Hospital, of both skin and venereal diseases. By far the most of the patients are venereal. The doctor told me that there is a law requiring all those having venereal diseases, applying for relief at the hospital, to be treated free of charge. This is a well meant effort to stamp out or control those plagues; but behold how it works! Because of this beneficent law sailors of all nations hasten to Copenhagen as being a good place to get free treatment. While in this city being cured it is not to be imagined that they are strictly continent, and no doubt many a case of infection is owing to them. This is one of the best instances I ever found of misplaced well doing.

Dr. Rasch was treating psoriasis by painting the patches with pure coal tar. The tar should only be painted on, not rubbed in, as in the latter case it is apt to cause dermatitis. In other cases of psoriasis he was using chrysarobin locally, but in very weak dosage (1-1000).

While in Copenhagen Dr. Reyn kindly showed me the Finsen Institute for the treatment of lupus.

With us in San Francisco lupus is a rare disease as even in a large practice one may not meet with more than one or two cases a year. In the Finsen Institute, however, the patients are in crowds, with the disease showing itself in all sorts of forms, and on all parts of the body. Light as developed by Finsen is the chief, though not by any means the only agent employed. The treatment by light has many disadvantages. It is long enduring, requiring from one and a half to two years for anything like an extensive case. It is tedious, for each sitting lasts an hour or more, and the sittings are frequent. It requires constant and accurate care on the part of the attendant, who has immediate charge of the patient, as the essential of the treatment is to keep the focus of light in the correct place, and also to keep the spot under treatment exsanguinated by pressure. This last is an important point, as otherwise the blood circulating in the tissues interferes with the action of the light. These two things, the accurate adjustment of the focus of light and the exsanguination of the tissues, mean that neither the attendant's attention nor her fingers may relax. Gentle reader, did you ever try to keep your attention on an uninteresting subject for an hour? or even on an interesting subject?

The treatment is not by any means always successful, and even when successful, there are frequent recurrences. With these drawbacks it is no wonder that the first enthusiasm aroused by the treatment has measurably subsided, and that some men whom I spoke to on the subject are decidedly opposed to the procedure.

The arguments in favor of the Finsen light treatment in lupus are: That it is frequently successful; that the scars following the light treatment are usually soft and inconspicuous; that the light treatment is often applicable when other treatments such as excision or cauterization are contraindicated or almost impossible, as around the eye.

The fact is that the light treatment is only a valuable addition to the treatment of lupus, and in the Finsen Institute itself they use many other forms of treatment, such as the electrocautery, pyrogallic acid, and so forth.

A curious circumstance in regard to recurrences is that they often happen far removed from the original focus. This phenomenon would seem to be opposed to our usual conception of lupus being a strictly local disease.

I asked both Dr. Reyn and Dr. Francis if they found many cases where there was tuberculosis of other organs coexisting with lupus. They said they did not find many such, although they were convinced that tuberculosis was more frequent among lupus patients than among patients afflicted with other diseases. I also took occasion to ask both these men what they thought of the nature of lupus erythematosus. They both expressed themselves as not knowing what it is, but as believing that it has no affinity whatever with tuberculosis or lupus vulgaris. In the chronic form of lupus erythematosus

they use the Finsen light with success in about fifty per cent. of the cases.

I was interested to learn that Dr. Reyn had worked out the opsonic index in one hundred cases of lupus vulgaris, with absolute lack of success. He found that the variations of the index in patients suffering from lupus vulgaris did not differ in the least from those of the same number of normal individuals.

From Copenhagen we went down to Berlin where we saw a clinic of a very different nature from any hitherto encountered. In Professor Lesser's service in the Charite, Professor Hoffman has under his immediate charge quite a menagerie of monkeys, sheep, goats, and rabbits that he has infected with syphilis. While standing in the pen watching Dr. Hoffman examining some infected monkeys, I felt a slight tugging at my coat, and turned to find a syphilitic almond-eyed goat nibbling at the hem of my garment. After this I confess to having had a very creepy feeling in Dr. Hoffman's barnyard. Dr. Hoffman told me he had carried the syphilitic virus through ten goats without any apparent lessening of its virulence. The attendants handle these infected animals fearlessly, and with an air of security surprising to one aware of the virulent nature of the poison to which they are exposed. They said that no accidental infection had as yet taken place. This statement is also surprising in view of the vast number of accidental (not venereal) infections that occur in ordinary life.

Incidentally, it may be remarked that the phagadenia of phagadic chancre seems to be due to the spirocheta refringans.

The discovery of the spirocheta pallida has caused a fresh enthusiasm in the study of the origin of syphilis, and Professor Hoffman says the belief that this disease was brought to Europe by the crew of Columbus returning from America is again a favorite. If this is correct, Europe may thank America for four most interesting products, the potato, tobacco, quinine, and the spirocheta pallida.

From Berlin we went to Dresden, where I visited one of the most interesting of clinics, that of Dr. Werther. Dr. Werther has charge of the service for diseases of the skin and of the genito-urinary system in the General City Hospital. The hospital building itself is most interesting. It is the old palace of Count Markolini, and the door handles still bear the crown of the former noble occupant. Attached to the hospital there is a beautiful garden or park that is now enjoyed by the city's charity patients. This Count Markolini was a wonderful fellow, and as Marshal of the Court of George the Just of Saxony, arranged everything in the royal household according to his own ideas. He was the first to introduce Chinese porcelain into Dresden, and so to develop that industry, that has ever since thriven there. He even brought over some Chinese, to whom he assigned special apartments in the Royal Palace. It now comes about that in the rooms formerly occupied by this high and mighty personage Dr. Werther and Professor Schmorl are deeply

interested in the study of spirocheta pallida. Professor Schmorl was the first to demonstrate this micro-organism in the tissues by the Giemsa stain. Previous to that it could be objected that the micro-organism stained in smears by Giemsa, and that stained, for instance, by the silver method in the tissues, were really two different organisms, taking stains differently.

Dr. Werther showed a particularly interesting case of syphilis in a little girl of two years of age. She had still the traces of a chancre on her lower lip, and an eruption of secondary syphilis on her body. Spirocheta has been demonstrated in the chancre. She came of a family, all of whose members had syphilis. The mother while pregnant with this child, had an inunction treatment under the direction of Dr. Werther for florid syphilis. According to our usual ideas, a child born under such circumstances should be immune from inoculation by syphilitic virus. This child, however, was not immune, and later on, as we have seen she acquired syphilis by inoculation into the lower lip.

There was also in the hospital an elderly woman suffering from that very interesting affection, mycosis fungoides, who was doing badly under all forms of treatment, even under the X-ray. Usually the X-ray markedly controls this disease, and especially hinders the formation of the characteristic large tomato-like masses. It is true that even in spite of the X-ray, the patients almost always die of the disease, but usually the amelioration and comfort from the X-ray, and the retardation of the course of the disease are so notable, that the introduction of this mode of treatment can be considered one of the great advances in therapeutics. To Dr. Werther's surprise a patient suffering from mycosis fungoides, that he treated with the X-ray a few years ago, recovered completely, and has ever since remained well. This, however, is an unexpectedly good result.

In showing a young fellow with a particularly well-marked syphilitic eruption Dr. Werther remarked that he had been treated in a Nature Cure Institute. He said he got some of the most neglected cases from such institutions where the patients were told that the eruption breaking out showed that the disease was coming to the surface. When their money was gone, however, they were given minute directions how to find the city hospital. The ways of the quack, resting as they do on the solid basis of human nature, are strikingly similar all the world over.

I doubt if irregular medicine is any less frequent in Germany than with us. For instance, while in Hamburg, I entered a pharmacy where a man who seemed to be the proprietor was in earnest conversation with a customer. They were talking quite distinctly, and were so situated that I could not help hearing what they said. The customer was telling anxiously of his wife, who had a serious dysenteric attack. The druggist listened to him, and finally gave him a small bottle of medicine, directing precisely how it should be taken. For the medicine the

charge was seventy-five pfennigs, about eighteen cents, and nothing was said about a fee for advice. This was cheaper than having one's hair cut. It may be that the husband had heard the French adage: "If you lose your wife and fifteen cents, it is a great pity for the fifteen cents."

From Dresden to Prague is but a short and pleasant journey, with an interesting city at the end as a reward for one's trouble.

Professor Kreibich has now the Clinic for Diseases of the Skin, formerly held by Professor Pick. The University Medical School is peculiar in that it is bilingual, there being a German and a Bohemian service. The hatred between the two races is so intense that they will not even be sick together.

Professor Kreibich showed me several cases, among them three patients suffering from dermatitis herpetiformis. Dermatitis herpetiformis is an affection in which American dermatologists take a special pride, because of the part played by Louis A. Duhring of Philadelphia in elucidating it.

After leaving Prague, we went by way of Nuremberg to Munich, where I did myself the pleasure of calling on Professor Posselt. Among his cases were two that were treated with the continuous water bath. One of these was afflicted with pemphigus. The other suffered from dermatitis exfoliativa that was said to have developed out of a forerunning psoriasis and seborrheic eczema. This man had dwelt in his tub for several years. Occasionally he would try the experiment of living in the open, but the itchiness, dryness and burning would soon become so intolerable as to drive him back into the water again.

In visiting the hospitals in Germany one is struck by the vast number of patients suffering from syphilis. Surely syphilis is not so common with us as it is on the continent of Europe, although it must be rapidly increasing with us too. This is one of the most sinister prices we pay for increasing population and increasing commerce, increasing cost of living, and its attendant postponement of the age of marriage.

Another observable feature is the number of lupus patients, and the hopeless tone assumed when speaking of the treatment of this disease. When I would mention how few cases of lupus we have in California, "Remain happy in their absence" would be the almost invariable answer.

As regards the treatment of syphilis, mercury still holds the first place, and one could see by the blue marks on the patients' skin that in clinic after clinic the inunction method was the favorite. It was so much the favorite in fact that it was seldom mentioned, although many other ways of introducing mercury were adverted to. Good wine needs no bush, and mercurial rubbings speak for themselves. Some men were using intramuscular injections of salicylate of mercury, which undoubtedly are good, and some the bi-chlorid of mercury, which also are excellent. One man apologized for not employing inunctions, saying that one of his assistants was desirous of trying a new preparation much advertised

as an intramuscular injection, but which left a fine trail of mercurial stomatitis behind it. One man was using the sosoiodolate of mercury.

During my journey I heard much of atoxyl as a remedy for syphilis, but saw very little of it used. One man said he used it if he found mercury to disagree. After using atoxyl for a time he would drop it, and recur to the use of mercury, which he would now expect to agree. To get decided anti-syphilitic effects from atoxyl, however, it has to be pushed to its physiologic limit, and there is danger that the patient may become temporarily blind. There is no occasion for insisting on the gravity of such a situation, as a perambulating case immediately becomes a hospital case. It is no wonder that many are entirely opposed to employing this drug against syphilis. Max Joseph, for instance, not alone did not advise atoxyl as an antiluetic remedy, but warned his hearers most emphatically against its use.

Our return home was as uneventful and pleasant as any part of our journey. It is profitable and enjoyable to see other cities, other peoples, other ways of living, but this is only a foretaste to the pleasure of again seeing San Francisco's magnificent bay.

"Happy indeed is he who returns home after a good voyage."

SUBJECTIVE SYMPTOMS AND PAINFUL SENSATIONS IN HEART DISEASE.*

By E. SCHMOLL, M. D., San Francisco.

The subjective symptoms and painful sensations in heart disease, and the reflex symptoms due to disturbed function of the heart, have attracted very little attention except in angina pectoris. In this disease, pain has monopolized the attention of observers to the exclusion of other symptoms.

It has been held an axiom that heart disease runs a painless course as long as the heart is well compensated. Potain used to say that when a patient complained of pain about the heart the presumption was against his having any heart lesion.

Close study of a great number of diseased hearts during the last two years has led me to the conviction that in every case of heart disease we have painful sensations, and that these sensations range from the hardly perceptible sense of constriction in mitral insufficiency, to the annihilating pain of coronary sclerosis.

The study of the symptoms during an attack of angina pectoris and the symptoms occurring between attacks, and the checking up of these observations in ordinary cases of heart disease, have shown me that the symptoms are due to a segmental lesion of the spinal cord caused by reflex irritation from the heart. This reflex irritation takes place in every case of heart disease. The intensity of the symptoms depends on many factors, but, in a general way, is proportionate to the intensity of the pathological lesion.

* Read before the San Francisco County Medical Society.

In the heart disease of most unfavorable prognosis—coronary sclerosis—the symptoms are most severe.

Reflex symptoms of heart disease can be divided into three groups: sensory, motor and vaso-motor symptoms.

At certain times, these symptoms exacerbate for a short period and are felt as attacks. The same symptoms, however, are present more or less constantly all the time.

We shall begin a discussion of the reflex phenomena of heart diseases with an analysis of the symptoms present in a painful attack caused by coronary sclerosis.

Our attention was first called to these symptoms by Mackenzie's brilliant researches on referred pain in visceral lesions, and confirmed and put on a more solid basis by the work of Head. The application of these researches to an explanation of the symptoms of angina pectoris was first dwelt upon by Gibson, in his well-known work on neuroses of the heart.

(a) The sensory symptoms can be divided into sharply defined groups: firstly, the sensation of impending death; and, secondly, pain in the heart and surrounding structures. While the sensation of impending death monopolizes the patient's attention and stands in the foreground of his description, our interest is principally concentrated on the pain and its irradiations. In the great majority of cases pain is retrosternal, and thence invades the eighth cervical and first dorsal segment. Many segments may be involved, very frequently the fifth and sixth cervical, occasionally the lower dorsal segments. I have found that the pain may irradiate in practically every segment, between the second cervical and the twelfth dorsal. Usually, several zones of pain exist, between which pain free areas are interspersed. In the majority of cases, the pain begins in the middle line and radiates toward the periphery. In other cases, pain appears over the whole area supplied by the corresponding segment at once.

In a few cases, I have seen the pain start from the periphery and progress toward the middle line (beginning of pain in the fingers). In most cases the pain is left-sided. In such event the lesion corresponds to left-sided affection—either a disease of the aortic valves, of the aorta itself, or of the coronary arteries.

Sometimes the pain is bi-lateral. In such cases, I have always been able to find a right heart lesion. In these infrequent right-sided cases, the mitral valve is usually affected. In a case observed lately, the patient suffering from mitral insufficiency with a dilated right ventricle, the pain started in the precordial region and radiated to the right side within the boundaries of the third and fourth dorsal segments. Pain existed in the eighth cervical and first dorsal segment of the right side, radiating downward into the fingers.

(b) Motor symptoms can show themselves either in the form of irritation or paralysis. As

an irritative symptom, we consider the sense of constriction around the chest, which the patient usually compares to the constriction of a band, or to an iron hand grasping the heart. This sensation is caused by a tonic contraction of the intercostal muscles.

Very frequently we find tonic contraction of the pectoralis major, corresponding to the spasm of the abdominal muscles over the inflamed peritoneum—a point which Mackenzie first drew attention to. In other cases, I have observed clonic contractions. In the case of right-side angina pectoris mentioned above, clonic contractions of the pectoralis major, deltoid muscle, and the muscles of the forearm occurred with every attack of pain. In such cases, as the pain passes off, very frequently paralytic symptoms follow the symptoms of irritation. In the great majority of cases, however, the paralytic symptoms are pronounced throughout the attack, without any preceding irritative symptoms. The left arm is usually powerless and cannot be elevated. The patient is unable to hold things in the left hand. Sometimes the motor symptoms are more pronounced than the sensory. I have seen a case in which typical attacks of angina pectoris alternated with attacks of transitory paresis of the left arm.

I treated a merchant, age fifty-four years, in whom, beside the signs of general arterio-sclerosis, a dilatation of the arch of the aorta was found. Several attacks of typical angina occurred after unusual efforts or mental strain. During these attacks, the patient observed that he was unable to elevate his left arm. Occasionally attacks occurred, caused by the same factors, in which the only symptom present was paresis of the left arm without any pain whatsoever. These attacks lasted but a few minutes, but they caused mental anguish not less than that which was caused in the same patient by the painful attack of angina pectoris.

(c) Vaso-motor symptoms. Changes in the blood distribution during an attack have never been missing in any attack I have seen, nor in any description of an attack given me by an intelligent patient. Usually, the vaso constriction can be first observed in the segment into which the pain irradiates, and only later it attacks the blood supply of the rest of the skin.

I have observed two cases in which the first sign of a beginning attack consisted of such a vaso constriction of the left hand that it resembled the hand of a corpse. In other cases, vaso dilatation precedes vaso constriction, the hand becoming cyanotic.

In some cases, vaso-motor symptoms are the most marked and occur with very little sensory or motor disturbance. Such cases were first described by Nothnagel as vaso-motor angina. Curshman has recently published the records of two such cases, and has proven by autopsy that they were caused by coronary sclerosis.

Examination of the patient at intervals between attacks shows that the same symptoms exist in an attenuated form, and that sensory, motor and vaso-

motor disturbances are produced in the segments affected during the attack.

(a) Sensory symptoms exist in the form of hyperaesthesia of the segments, in which the pain prevails during the attack. This hyperaesthesia can be shown by any method used for ordinary neurological examinations. Usually, I follow the sternum with a pin, which I apply with equal pressure over the whole surface. As soon as the hyperaesthetic area is touched, the patient complains of being pricked by the pin, or of a burning sensation.

These hyperaesthetic areas, to which Mackenzie and Head first drew attention, are absolutely constant. I have never missed them in any case of angina pectoris. Their objective character is proven, as Mackenzie has first shown, by the appearance of a goose-skin reflex over the area of the diseased segment, and by dilatation of the pupils.

Hyperaesthesia involves not only the skin, but also the underlying muscles, as is easily shown by squeezing of the muscles corresponding to the involved segments. This hyperaesthesia corresponds, as already stated, to the distribution of the spinal segments, and to the distribution and irradiation of the pain during the attack. A very conclusive demonstration of this I saw lately in the case of right-sided angina before mentioned. In this case, beside the irradiation in the eighth cervical and first dorsal segment, pain occurred in the right lumbar region and the hip joint. Examination showed typical hyperaesthesia over the eighth cervicle and first dorsal segment, and the second zone over the third and fourth dorsal segments. Corresponding to the third zone of pain, typical hyperaesthesia could be shown in the first and second lumbar segments.

In the intervals between attacks, patients are by no means free from pain, but complain more or less constantly of painful sensations over the hyperaesthetic areas. There is usually some shooting pain, or distinct soreness over the afflicted parts.

Sometimes the pain feels like a rheumatic pain, thus accounting for the painful sensations in the left shoulder-joint, which heart patients often complain of. Very frequently we find shooting pain in the left arm most intense around the elbow. In other cases, the patient complains more of paraesthesiae of numbness in the last two fingers. In other cases, we find, instead of a hyperaesthesia, an anaesthesia, in segmental distribution. In a case described by Gibson, anaesthesia of the left side of the thorax and the inside of the left arm were found.

(b) The motor symptoms in the interval between attacks consist of paretic conditions, or irritative symptoms.

Generally, the tonus of the muscles corresponding to the hyperaesthetic areas is increased. This is most easily detected in the pectoral muscle, which, in comparison with the muscle of the other side, is decidedly hypertonic. This hypertonicity, however, does not correspond to an increase in strength. A comparison with the corresponding muscles of the

right side shows that strength is diminished in very much greater degree than would correspond to the physiological difference.

Very frequently the left arm measures $1\frac{1}{2}$ to $2\frac{1}{2}$ centimeters less than the right arm.

A typical case of paralysis following repeated attacks of angina pectoris, in which the patient lost the ability to grasp anything, or to carry an object in his hands, has been described by Gibson. Mechanical and electrical irritability was considerably increased, while the muscles themselves presented considerable atrophy.

Complete paralysis of the muscles of the diseased segments is rare, and I have never observed it. However, several cases of this kind have been described. In a case reported by Eichhorst, paralysis, with reaction of degeneration, had occurred in the muscles innervated by the ulnar nerve in a patient presenting the symptoms of angina pectoris.

(c) Vaso-motor symptoms, in the intervals between attacks, are usually not as well marked as the motor and sensory symptoms. While the action of the vaso-constrictors is usually more pronounced in the attack, vaso-dilatation prevails in the interval between attacks, so that the hands usually present a cyanotic tinge due to vaso-dilatation. In some cases, this condition alternates with attacks of vaso-constriction, in which other symptoms of angina are missing. In these, such a vaso-constriction takes place that the hand becomes absolutely exsanguinated, and the symptoms resemble those of Raynaud's disease to such a degree that the differential diagnosis is often a matter of great difficulty.

I have observed a number of these cases, and shall report them in the near future. The report of one case, referred to me by Dr. Philip Thomas, will be sufficient to show the principal points. The patient, a female, age twenty-nine years, presents the typical symptoms of aortic insufficiency, complicated with typical attacks of anginoid character, in which, beside the pain, paresis of the left arm and complete anemia of the finger tips are very pronounced. Occasionally, attacks occur in which the blood circulation through the fingers seems to be entirely stopped, and the hands resemble those of a corpse. These attacks last for several hours, and are not accompanied by any appreciable amount of pain. They are very frequently caused by exterior influences, as immersion of the hands in cold water. Evidently the explanation of this phenomena can be found in an increased excitability of the reflex-arch.

As I have already stated, similar symptoms affecting the motor, sensory, and vaso-motor functions of certain spinal segments more or less identical with the symptoms of angina pectoris occur in heart diseases without coronary sclerosis. Attacks may be observed in which patients complain of pain over the chest, in the left arm, paresis of the left arm and disturbances in vaso-motor regulation.

These symptoms occur in cases in which the left ventricle or the aorta is diseased. They are espe-

cially pronounced in cases of insufficiency of the aortic valves and dilatation of the arch of the aorta. Very frequently they are met with in cases of post-infectious myocarditis, and show themselves under these conditions principally in paretic conditions of the left arm, occurring after fatigue.

A description of the symptoms would be only a repetition of the above-described phenomena. A better insight into the conditions alluded to may be gained by the study of the history of the following cases: A typical example of anginoid pain, caused by fatty heart, may be found in the following history: Mrs. B., thirty-four years old; very obese, complains of shortness of breath and great weakness after slight exertion. Her heart is slightly enlarged to the right. Its tones sound very distant. Over the apex the first sound is prolonged, otherwise no signs of insufficiency of the heart can be demonstrated. She suffers from attacks caused by exertion or excitement or by overeating. They consist of more or less distressing pain over the region of the praecordium, radiating to the neck and to the left arm. The pain causes a sense of constriction complicated by a sensation of fear. At the same time she feels as if somebody grasped her neck and choked her. Palpitations occur in some attacks, but they are by no means a constant symptom. During attacks the inside of the left arm becomes anaesthetic and the fingers feel very numb. After the attack has lasted for some time, the arm becomes very weak so that she cannot perform any work with it. Duration of the attacks varies from a few hours to one or two days.

On examination hyperaesthetic areas are found, one corresponding to the third and fourth cervical segment, and a second one to the eighth cervical and first dorsal. Symptoms of motor irritation in the first zone explain the very pronounced sensation of choking. The objectivity of the hyperesthesia is demonstrated by the occurrence of the goose-skin reflex and the dilatation of the pupils.

Under appropriate treatment, these symptoms, and with them the hyperesthesia, disappeared.

The following case illustrates the anginoid symptoms in mitral stenosis: The patient, twenty-one years old, complained for the first time of heart symptoms about two years ago, after an attack of pleurisy. Dyspnoea on lying down and palpitations on exertion were complained of. There is a constant sense of pressure over the heart like a weight compressing the thorax. At times the pain becomes sharper, and shoots down the left arm into the third and fourth fingers, while in the chest there is a sensation of a hand grasping the heart. Sometimes the left arm becomes paralyzed during such an attack, and the patient is unable to perform any work with her left hand. These attacks come most frequently after some undue effort, especially if patient has been running upstairs. Sometimes the paralysis comes on without pain. Here, too, the relation of excessive muscular work to the attack is apparent. The attack always begins with cyanosis of both hands. On examination the signs

of a double mitral affection are found. There is typical hyperesthesia over the third and fourth dorsal and the first dorsal and eighth cervical segment.

Similar symptoms I have seen in a great many affections of the heart, especially in the cases of aortic disease. In all these, the typical hyperesthesia could be made out. The subjective symptoms and the irradiation of the pain corresponded to the extension of hyperesthesia.

The pathogenesis of these symptoms found in heart disease extending over certain spinal segments and affecting the motor, sensory and vaso-motor areas supplied by these nervous centers, has already been discussed, as far as the sensory symptoms go, by Mackenzie and Head. Mackenzie's conception of the phenomenon seems to me to explain best the symptoms discussed in this paper. He thinks that by the disease of the heart a constant stimulus irritates the nervous system of the heart—the sympathetic nerve. This constant irritation of the sympathetic nerve leads to an irritation of the spinal segment, at which the heart fibres connect with the spinal cord. The irritation of the sensory part of the spine leads to a sensation, which, according to the law of Muller, is projected into the periphery supplied by the nerves of the spinal segment: the irritation of the sensory part may become so strong that the cells get overtired, and are incapable of conducting the stimulus-producing anaesthesia. Similar conditions prevail for the motor part of the spinal chord. Irritation of the spinal segment leads to tonic or clonic contraction of the muscles, receiving their innervation from this spinal segment. Long-lasting irritation may lead to paralysis. Similar conditions prevail for the vaso-motor disturbances. The innervation of the vaso-motor processes has been definitely shown to be of the same segmental character as motor or sensory innervation.

According to our conception of the symptoms of angina pectoris, these originate in every case of heart affection, especially if the left ventricle is diseased. They are caused by the constant irritation of the corresponding spinal segments, through the sympathetic nervous system innervating the heart.

Differentiation of the symptoms of angina pectoris due to coronary sclerosis, and those occurring in other pathological conditions of the heart, is, at times, very difficult, as there exists only a difference in intensity, not in character. The lesion interfering most with the lesion of the heart, coronary sclerosis, is apt to lead to the most accentuated symptoms—to the classical attack of angina pectoris.

Prolonged observation of the patient in regard to the causative factor of the attacks, their duration, intensity of the pain, etc., will, in the great majority of cases, permit a differentiation and allow us to give a correct prognosis.

COOPER COLLEGE SCIENCE CLUB.

Dr. Schmoll, presenting case of infectious meningo-
myelitis:

The case which I have the honor to demonstrate tonight has been a very interesting one to me on account of a very unusual spinal lesion presenting considerable difficulties in diagnosis. The patient is thirty-two years old. There is nothing in his family or past history which would shed any light on the present condition except that he had a chance about ten years ago, but without any secondary symptoms. I may mention here that examination does not show any symptoms of syphilis, so that it remains doubtful whether the patient ever had syphilitic infection or not. The present sickness began about three months ago with pain in his back, getting worse when he walked downstairs, and especially if he made a misstep. This pain would occur no matter on which leg he would step. At the time he was a patient in our clinic at Cooper College, and as no objective sign could be found, his case was diagnosed as one of muscular rheumatism. Slowly the pain progressed, extending from the right lumbar region across his abdomen and then crossing the middle line, finally encircling the whole body at the height of the umbilicus. About five or six weeks ago patient began to notice that he had a numbness in his left leg extending over the region of the first and second lumbar segments, and over the anterior aspect of his leg down to the knee. About three or four weeks ago numbness was noticed in his right leg and finally after another week patient began to notice his legs getting weaker, and a few days ago he was completely paralyzed. At the same time paralysis of the bladder and rectum occurred, patient being unable either to void urine or pass feces. Patient entered the hospital three days ago for examination in very much the same condition in which you see him tonight. We have, as you see, a complete paralysis of the right leg, no movement whatsoever being obtained. On the left side every movement is possible but is very weak. We find especially a weakness of the abductors and adductors of the leg; rotation of the left leg is almost impossible against the slightest resistance. A very interesting condition obtains in the muscles of the abdomen, as the abdominal wall below the naval is absolutely paralyzed, while the muscles above the umbilicus contract normally. If the patient tries to sit up without helping himself with the hands, the lower part of the abdomen protrudes, while the naval is drawn upwards towards the sternum. Examination of the sensory symptoms does not reveal any constant changes. There is a slight hyperesthesia, and slight hypoesthesia over both legs and a relative thermo-analgesia over the left leg, while the sense of heat and cold are normal in the right leg. There is a zone of hyperesthesia especially on the right side above the zone of paralysis. Examination of the reflexes shows that we have on both sides distinct Babinski, distinct Oppenheim, no ankle clonus; Achilles and knee-jerks are present but feeble. The plantar reflex is present as well as the cremasteric, while the lower abdominal reflex is constantly absent. The upper abdominal reflex is mostly absent but can be obtained occasionally. Rectal examination shows that the sphincter contracts around the finger; otherwise normal condition. In the upper part of the body we find absolutely no symptoms and no eye symptoms. In the urine there is a good deal of pus found, and small amount of albumin corresponding to the amount of pus. Patient has had during the first three or four days temperature ranging up to about 103°, leukocytes of about 15,000. Fever has disappeared since yesterday and with it began a marked improvement in the condition, so that the motility of the left leg today is very much better than it was yesterday. The diagnosis of this condition is in the distinction between

the localization and pathological nature of the process. The localization is given by the extent of the paralysis and the hyperesthesia present, and points to the region between the ninth and tenth dorsal segments. The development of the process points to its beginning with an irritation of the posterior roots of the ninth dorsal segment, causing neuralgia. There the lesion progressed slowly and led to an irritation of the motor roots at the same height, showed itself in a spasm of the abdominal muscles, which I have forgotten to mention but which was present as a very annoying symptom for the last two months. Then the process began to involve the right side of the spine, showing itself by a lesion caused in the sensory part of the spine by the paresthesia occurring in the left leg. From then the lesion progressed very rapidly, leading to a complete paralysis of the right leg, caused by movement of the motor part of the right half of the spine. Signs of the less severe involvement of the left side showed themselves by paresthesias in the right leg and paresis of the left. At present we have the signs of a more or less pronounced Brown-Séquard lesion of the spine, involving principally the right side of the spine and beginning from the region of the sensory motor roots and involving, to a minor degree, the left side of the spine. As far as the pathological nature of the process is concerned there are four possibilities. First, tumor of the spine; second, localized syphilitic lesion; third, meningomyelitis; and fourth, involvement of the spine secondary to a vertebral lesion. We can exclude the vertebral lesion on account of the free motility of the spine. We see that the patient can bend over. That if we lift the patient by the legs his lumbar vertebrae bend normally. For these reasons we exclude vertebral lesion and conclude that we have to treat with a spinal lesion itself. As far as the tumor is concerned the development has been too rapid. Spinal tumors usually take years to develop and usually cause a very much greater amount of pain than we had in this case. The diagnosis of syphilitic lesion remains open, as we have no sure signs of a syphilitic infection. A meningomyelitis is quite within the range of possibilities and the fact that the patient began to improve when his fever came down speaks for an infectious process as the cause of his present sickness. Sure differentiation between these two possibilities will only be possible after the therapeutic test to which we are going to put the patient, that is, a strict antisyphilitic treatment.

Note—At the time of publication patient had improved very rapidly, even before his syphilitic treatment was started in. After about two weeks his paralysis had completely disappeared, he had again control of his bladder and rectum and the only remnant of his past affection was a slight weakness of his legs, double sided Babinski, and a paralysis of the lower part of his right abdominal muscles. It seems to me that this course justifies a diagnosis of infectious meningomyelitis and that his case can be put on a parallel with the case recently published by Krause and Oppenheim.

Dr. Stillman, discussing the case presented by Dr. Schmoll: I cannot but concur with the differential diagnosis so far as tuberculosis is concerned. I am certain that this man has no tubercular or other inflammatory condition of the spine. I consider that if the symptoms do not improve rapidly an exploratory operation would be decidedly in order. Cases of transverse myelitis are so hopeless that the additional inconvenience and trouble caused by exploratory operation should not be taken into consideration, and I think exploratory operations should be made more often. As to the localization of the lesion in this case the symptoms certainly point to the dorsal region, and as the doctor has said, it seems to be just at the tenth segment. Still if I were to

operate I should expect to expose at least four inches of the cord in order to be able to examine that whole region. There seems to me to be no sense in making a small opening.

Dr. Donald Smith then reported a case of brachial neuritis (of the perineuritis or interstitial type), occurring four years after infection by gonorrhea.

Female, 28 years. Married, manicure. The family history as far as could be learned was negative. Has had the usual diseases of childhood except diphtheria. About four years ago was infected by gonorrhea, followed by the usual treatment when local symptoms subsided. One month later had an acute inflammation of the peritoneum with complete recovery. This attack was followed by two other attacks, the last occurring two years ago. Was told by a physician at some subsequent time that there was present on the right side a pus tube. The patient's menstrual history is as follows: She began to menstruate at the age of 17 years and was regular. Flowed from six to ten days and has always been very painful during the entire period. The flow was excessive during two or three days. Since the infection by gonorrhea has had on several occasions a discharge of pus from the uterus, which had no connection with the menstrual period.

The present trouble began about April 1, 1907, when patient first noticed some soreness and stiffness confined to the neck and shoulder of the left side. This became gradually worse, until about one week later, when the patient awoke one morning and could not raise the left arm without causing severe pain in the shoulder and arm of the same side. A few days later pain became apparent in the elbow and forearm of the same side. She then consulted a physician who placed her under the influence of morphin, gr. $\frac{1}{2}$, daily for three weeks, with no result. Also given electricity with no result, the condition becoming gradually worse. The patient then consulted Dr. Waldeyer, to whom I am indebted for the following notes on her condition and treatment at that time, as well as the notes upon the subsequent operation.

(Dr. Waldeyer's notes): "When seen by me the patient complained of severe pain in the left neck, shoulder and upper extremity. Pain was spontaneous and increased upon active and passive motion."

When seen in consultation with Dr. Waldeyer on May 1, 1907, the patient presented the following status: Well nourished and of dark complexion. Sleep normal except when disturbed by pain. Appetite good. Has not lost weight. Feels perfectly well except for pain, and paresis of left hand. Bowels fairly regular and normal. Station normal. All reflexes exaggerated (reflexes of the left arm not being tested on account of pain produced). Cranial nerves normal. Swelling in the supraclavicular space on the left side. The muscles of the left neck, shoulder and upper extremity do not show atrophy. There was present slight paresis of the left upper extremity. The muscles of the left side of neck, shoulder and upper extremity are tender upon pressure and there is also spontaneous pain present in the same region. The pain is increased upon motion. The circumflex, median and ulnar nerves are extremely tender along the entire course. The musculo-spiral nerve is tender over its posterior portion. Pressure in the axillary space causes extreme pain radiating in all directions. There is present over the entire area hyperesthesia and hyperalgesia. There is pain upon pressure over the fifth, sixth and seventh spinous processes. Examination of the thoracic and abdominal viscera failed to show any abnormalities. The pelvic contents examined by Dr. Waldeyer presented the following: "Uterus slightly enlarged and retroflexed. Tender mass in left fornix. A smear showed a few intracellular diplococci. A diagnosis of salpingitis was made and

brachial neuritis with involvement of the spinal roots forming same and, in the absence of other possible causal factors, it was decided to clear up, by operative procedure, all local conditions in the pelvis and genito-urinary tract. It being impossible for the patient to enter the hospital at that time it was decided to fixate the arm and administer salicylates. This was done for about four weeks without any improvement whatever. On the contrary the condition became gradually worse and the pain as well as the parasthesia extended to the right upper extremity and both lower extremities, never, however, becoming as marked as in the left upper extremity.

The patient came to operation on May 28th. The following notes by Dr. Waldeyer: "Median incision made through the rectus. Uterus and left tube very firmly bound down by strong adhesions. Tube ligated and removed with ovary. Peritoneum and fascia closed with silk. Silver wire, subcuticular for skin. Patient made a very quick and uneventful recovery."

Following the operation the arm was still painful and massage was used in the form of effleurage, never to the extent of causing pain, and gradually increased as rapidly as the pain would allow, until deep petrasauge was possible. This was continued as long as the patient remained in the hospital, about three or four weeks. With this, wet packs were applied to the arm and changed every twelve hours. The pain gradually decreased during this time and at discharge from the hospital there was present a dull ache, especially about the shoulder. The patient was treated twice a week for this with the sinusoidal and weak galvanic current, and eventually reported a complete cessation of all pain. There has been no return up to present date.

In view of the above case the following questions present themselves:

Was the neuritic condition caused, directly or indirectly, by the gonorrhreal infection?

If so, was the operation advisable? and,

What tissues may be involved and to what extent by gonorrhreal infection, both in the male and in the female?

Dr. Rigdon, discussing paper read by Dr. Smith:

Gonorrhrea is the cause of so many general disturbances, so many affections remote from the point of infection, that the more we study the disease the more convinced we become that if, in most cases, according to the common acceptance, it is a local disorder it may yet in a respectable minority of instances be classed as constitutional. It seems clearly established that many general disturbances which were formerly thought accidental, in reality are caused by substances absorbed from the local inflammation. Among the remote manifestations of gonorrhrea may be mentioned an inflammatory affection of the eye—not the ordinary gonorrhreal ophthalmia with which we are so familiar, but an inflammation of the deeper tissues of the anterior wall of the eye arising from infection carried through the general circulation.

I have had no experience with gonorrhrea of the spinal nerves, such as reported by the doctor tonight, or at least I have not recognized such cases, but if from a local gonorrhrea a poison may be absorbed which, circulating in the blood, may attack tendons, joints, pericardium, etc., I can see nothing inherently impossible in the nerves being occasionally the seat of attack, thus giving rise to a form of gonorrhreal neuritis. Perhaps more careful observations with this possibility in mind may result in such cases being reported.

The question was asked as to the advisability of operating upon such cases as the one presented tonight. My judgment would be that in the present state of our knowledge of gonorrhreal neuritis we

would scarcely be justified by the nervous symptoms alone in deciding upon an operation for the removal of a Fallopian tube or an ovary; if local tubal or ovarian symptoms were present these might be sufficient to induce a decision to operate. In other words, our decision would be based upon general surgical considerations.

Dr. Stillman: My only feeling in this matter is that neuritis with gonorrhrea does not occur frequently enough to have a causal relationship. Gonorrhrea itself is so very frequent and its complications and sequelae so numerous and well understood that it seems we should have more often observed the association of the two afflictions. I do not remember to have read of any form of neuritis attributed to gonorrhrea, but it is an interesting subject and an interesting suggestion.

Dr. Barkan: In addition to what Dr. Rigdon has mentioned about ophthalmic affections following gonorrhrea, I will say that the attention of the eye surgeons has been called, in the last decade, to the fact that iritis will develop in a large per cent. of the cases after gonorrhrea, especially when not in the acute stages, but with relapse and simultaneously with gonorrhreal affections of the joint. In other words, we have found that there is such a thing as gonorrhreal iritis. It is not the gonorrhrea transferred from the urethra, but the uveal tract invaded through the channel of circulation. The eye has a perfectly normal appearance, which is rather peculiar in clinical symptoms. There is not much swelling of the stroma. It looks more like a variety of rheumatic iritis, an iritis inclined to show rheumatic pains around the head.

SAN FRANCISCO COUNTY.

Officers, 1908.

President.....	Chas. G. Levison
First Vice-President.....	A. J. Lartigau
Second Vice-President.....	G. B. Somers
Secretary	Arthur A. O'Neill
Assistant Secretary.....	Milton B. Lennon
Treasurer	Emmet Rixford
Librarian.....	A. J. Lartigau

Directors, 1908.

Barbat, J. Henry	Levison, C. G.
Brown, P. K.	Moffitt, H. C.
Brunn, Harold	O'Neill, Arthur A.
Carpenter, F. B.	Ophuls, W.
Gibbons, Morton R.	Porter, R. L.
Gunn, Herbert	Reynolds, H. R.
Hunkin, S. J.	Rykogel, H. A. L.
Huntington, T. W.	Rixford, Emmet
Jones, P. M.	Somers, G. B.
Kerr, W. W.	Tait, D.
Lartigau, A. J.	

Committee on Admissions.

Gibbons, M. R., Chairman.	
Thorne, Walton	Brunn, H.
Terry, W. I.	Blake, W. F.

Executive Committee.

Frankenheimer, J. B., Chairman.	
Bush, C.	Lennon, M. B.

Finance Committee.

Huntington, T. W., Chairman.	
Sherman, H. M.	Gibbons, H., Jr.

Committee on Medical Ethics.

Tait, D., Chairman.	
Ebright, G. E.	Jones, P. M.
Carpenter, F. B.	Ophuls, Wm.

Committee on Public Health.

Moffitt, H. C., Chairman.	
Gallwey, John	Watkins, J. T.
Brown, P. K.	Weeks, A.

Committee on Library and Publication.

Hewlett, A. W., Chairman.
Moffitt, H. C. Silverberg, M.

Milk Commission.

Spalding, A. B., Chairman.
Porter, R. L. Mace, L. S.
Brown, A. Blum, S.

RESOLUTIONS ADOPTED BY THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

To the President and Board of Directors of the County Medical Society, San Francisco.

Gentlemen:

I request that you present to the Society, for discussion and a vote, the following resolution:

Whereas, It is the sense of this Society that the improved status of the profession in the State of California is due to the increased stringency of both matriculation and professional examination, and in view of the fact that the elevation of the standards and their maintenance is in no small measure attributable to the untiring efforts of Dr. Dudley Tait, be it

Resolved, That the Society has heard with great regret that the present members of the Board of Examiners of California have seen fit to terminate Dr. Tait's official connection with said Board; be it further

Resolved, That such action was a mistake and a reflection upon the organized profession of California; and that this Society does congratulate Dr. Tait on the efficiency of his service and the consistent honesty of purpose and unselfish devotion to the interests of the profession exhibited by him during the whole course of his connection with the State Board of Examiners; Be it further

Resolved, That a copy of this resolution be mailed to all County Societies and to the House of Delegates of the State Society with the request for action.

Yours very truly,
E. SCHMOLL.

RESOLUTIONS ENDORSED BY THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

Whereas, The American Medical Association has established a Council on Pharmacy and Chemistry, composed of scientists of world-wide reputation and standing, whose function is to examine pharmaceutical products in order to be able to inform the profession as to the actual composition of said products; and,

Whereas, After careful examination of many hundreds of said products, it has officially announced its approval of a large number of them, and, in order to make clear to the profession the methods and purposes of their work, have published exposures of a large number of the fraudulent preparations that have been foisted on the members of the profession and, through them, on the public, by interested owners and manufacturers, frequently laymen, ignorant of the use of drugs, except their meretricious use, as examples of the much larger number which they have found of little or no value, or positively harmful; and,

Whereas, We believe that every physician in Kentucky is vitally interested in the work of this Council, and desires in every possible way to promote its usefulness and interest; and,

Whereas, The greatest aid to the nostrum manufacturers, in their nefarious and avaricious work, has been the medical press, whether controlled by medical organizations, individual members of the profession or interested lay-firms; and,

Whereas, We believe the time has arrived when the great profession of medicine, and all agencies controlled by it, should divorce itself permanently, finally and forever from those interests which, like ghouls, prey upon the sick and afflicted through the commercial sale of nostrums and dishonest, so-called proprietary, medicines; now, therefore, be it

Resolved, By the Kentucky State Medical Association, in annual session assembled, that we heartily endorse the formation of the Council on Pharmacy and Chemistry, that we extend it our confidence and congratulations on the splendid work already accomplished, and that we pledge it our unanimous support in its purpose of freeing our profession, and its publications, from nostrum control; and be it further

Resolved, That, in pursuance of this object, we request each county society in Kentucky to devote a special session to consideration of this important question with a view to securing the active aid of every licensed practitioner in the State, and that the Council of this Association be requested to omit from the advertising columns of our Journal all pharmaceutical preparations, which are not manufactured in conformity with the United States Pharmacopoeia or the National Formulary, until they have been approved by the Council on Pharmacy and Chemistry of the American Medical Association; and, be it further

Resolved, That we request every physician in Kentucky to secure a copy of the abridged United States Pharmacopoeia and Formulary, and be guided by this and the approval of the Council on Pharmacy in their use of medicines, and, be it further

Resolved, That our Council be directed to communicate with the editors, owners, collaborators and publishers of the medical journals of this country on this subject, and to announce to the profession of Kentucky, through the columns of our Journal, such publications as are willing to assist the profession by freeing their columns of nostrum advertising, and we hereby pledge our support to such journals, even if they find it necessary to increase their subscription rate; and further, be it

Resolved, That we expressly condemn the publication of so-called medical journals by interested manufacturers of nostrums, and request the profession of the State to decline to receive them.

NEW AND NON-OFFICIAL REMEDIES CONTINUED FROM JANUARY.**ORTHOFORM-NEW HYDROCHLORIDE.**

Orthoform-new hydrochloride $C_9H_9O_3N \cdot HCl$, is the hydrochloride of meta-amido-para-oxybenzoic methyl ester.

Actions and Uses.—The actions, uses and dosage of this compound are similar to those of orthoform-new, which see. Manufactured by Farbwerke vorm. Meister, Lucius & Brueining, Hoechst a. M. (Victor Koechl & Co., New York).

OVOFERRIN.

Ovoferin is a solution containing 5 per cent. of an artificial proteid-product in which iron is present in the so-called "organic" or "masked" form (a form which does not give the iron-test directly). The solution also contains 10 per cent. of alcohol and some aromatics.

Actions and Uses.—Ovoferin is not appreciably affected by the gastric juice, a 0.5 per cent. solution of hydrochloric acid liberating its iron very slowly and incompletely. The product ranks with the other forms of artificially masked iron, which are devoid of the local action of the soluble inorganic iron salts, and, according to some authorities, are more readily absorbed and utilized. Dosage.—8 to 16 Cc. (2 to 4 fluidrams) corresponding to from 0.03 to 0.06 Gm. ($\frac{1}{2}$ to 1 grain) three times a day. Manufactured by Barnes & Hille, Philadelphia.

The following articles were added to the list of New and Non-Official Remedies, approved by the Council on Pharmacy and Chemistry:

Guaiacol Carbonate Comp. (H. K. Mulford Co.)
Neuro-Lecithin. (Abbott Alkaloidal Co.)
Lecithol. (Armour & Co.)

H. M. C. TABLETS.

A correspondent writes:

"The January number of our Journal has just reached me, and I am very glad to note that you have referred so emphatically to the 'H. M. C.' tablets. I have heard of several babies born dead after the tablets had been used during confinement, but of course cannot be sure that the anesthetic was the cause. I believe hyoscine and morphine must be used with great care, if at all, in obstetric work, and I suspect that this free advertising of that combination by the Abbott Company is doing and will do much harm. Chloroform, used correctly, seems to me an almost ideal anesthetic for this work, as it is always under control, while anything given hypodermically is immediately beyond control and can not be called back. Furthermore, this applies very strongly to the fact that one is throwing into the fetal circulation extremely powerful chemicals without knowing what the result will be."

CONTRACT PRACTICE.

To the Editor of the State Journal:

Considerable has been said recently about the old line insurance companies cutting the examination fee from \$5.00 to \$3.00. In San Joaquin county recently a circular letter was sent to every member asking them to send the Secretary a list of all the insurance companies they examined for, also stating the fee paid, as an effort was to be made to make them restore the old rate.

That action was commendable and will, no doubt, bring good results; but there is a greater menace to our fee bill than this and far more demoralizing to the profession, to wit: Contract practice for lodges. Think of a doctor joining a lodge and signing a contract to do, not only the members' practice, but that of his entire family, for the pitiful sum of two dollars a year, if he live within seven miles of the lodge room!

Could anything be more demoralizing? Could a physician possessing any professional pride submit to such indignity? And yet the lodge doctor will say, "If I don't do it some other doctor will."

For the same reason would he perform an abortion and secure the fee, because if he did not some other doctor would?

If a new doctor comes in and goes to cutting the fees for the sake of getting practice, the profession sneer at him and rate him a cheap doctor, and yet nothing is quite so cheap as the lodge doc-

tor who does the whole family practice for two dollars a year. The insurance examination at one dollar would not be low enough to be in the same class. If the medical profession expect to maintain the respectability to which they are entitled they will take steps at once to suppress this great menace to the fee bill.

S. W. HOPKINS, M. D.

TRAINING IN MEDICAL ORGANIZATION.

The students of the University of Pennsylvania Medical School have formed an organization the purpose of which is to acquaint the undergraduates with the workings of the American Medical Association, after which it is very closely modeled. The various student societies take the place of the state organizations and elect members to a house of delegates which transacts all the business of the association. An annual meeting is held at which papers are read by chosen members, thus encouraging original research and a scientific spirit. The organization is named the Undergraduate Medical Association of the University of Pennsylvania, and already has over two hundred and fifty members.

COUNTY SOCIETIES.**BUTTE COUNTY.**

The regular monthly meeting of the Butte County Medical Society was held in Chico the evening of December 13th at the office of Dr. N. T. Enloe. The following members were present: O. Hawkins of Biggs, L. L. Thompson of Gridley, C. L. Browning, O. Stansbury, N. T. Enloe, E. F. Gatchell of Chico, and Dr. Wulschlager of the United States Army as a visitor.

The following officers were elected for the ensuing year: President, Dr. L. Q. Thompson of Gridley; vice-president, Dr. C. L. Browning of Chico; secretary and treasurer, Ella F. Gatchell of Chico; member of board of census, N. T. Enloe of Chico.

Drs. C. L. Browning of Chico, E. Kusel of Oroville, O. Hawkins of Biggs and L. Q. Thompson of Gridley were appointed a committee to confer with the local boards of health in the respective towns relative to the pure food and drug laws.

An able paper was presented by Dr. W. H. Banks on "Diabetes," in which he stated fully the different suppositions relative to the disease. The subject was still further discussed by Dr. Stansbury and other members. It was voted to hold the next meeting at Oroville in January.

ELLA F. GATCHELL, Secretary.

SAN JOAQUIN COUNTY.

The annual meeting of the San Joaquin County Medical Society was held Dec. 30, 1907, at the office of Dr. R. R. Hammond, with the following attendance: Drs. M. Goodman, J. D. Young, S. W. R. Langdon, S. F. Priestly, H. E. Sanderson, E. L. Blackmun, B. F. Walker, J. J. Tully, E. A. Arthur, R. R. Hammond, W. W. Fitzgerald, I. S. Zeimer, C. L. Six, Hudson Smythe, H. C. Petersen, A. W. Hoisholt, J. P. Hull, F. R. Clarke, R. B. Knight, H. N. Cross and C. R. Harry.

A communication to Dr. W. W. Fitzgerald was received from the New York Life Insurance Co. relative to the fee for medical examination in life insurance. It was moved and seconded that the Secretary reply to the same and inform the company that the society did not permit any of its members to make an examination for less than \$5.00.

This being the annual meeting, the election of

officers for the ensuing year took place with the following result:

President—E. A. Arthur.
 First Vice-President—J. P. Hull.
 Second Vice-President—Mary C. Taylor.
 Secretary and Treasurer—B. F. Walker.
 Delegates to State Society—R. R. Hammond and J. P. Hull.
 Alternates—A. W. Hoisholt and H. E. Sanderson.
 Committee on Admissions—M. Goodman, M. Smyth, R. R. Hammond, C. R. Harry and F. R. Clarke.
 Committee on Ethics—A. W. Hoisholt, J. D. Young, J. P. Hull, W. W. Fitzgerald and H. Smythe.
 Committee on Finance—S. E. Latta, J. J. Tully, H. E. Sanderson.
 Trustees—J. G. Thompson, H. W. Taggart and D. F. Ray.
 Dr. Langdon withdrew from the presidential nomination and Dr. Harry withdrew the name of Dr. B. J. Powell, nominee for Secretary and Treasurer, because of the absence of the doctor from the city.
 No further business appearing the society adjourned.

R. B. KNIGHT, Sec'y Pro Tem.

SANTA BARBARA COUNTY.

At the annual business meeting of the Santa Barbara County Medical Society the following members were present: Drs. Barry, R. Brown, Dial, Conrad, Hindley, Morrey, Newman, Rowell and Stoddard.

Under the head of Papers and Discussions, the Society listened to an important paper by the retiring president, Dr. C. S. Stoddard, entitled "Medical Ethics." He was followed by Dr. Rexwall Brown on "Lodge Practice."

At the close of the regular program the Society proceeded to the election of new officers for the year 1908, with the following result: William T. Barry, M. D., president, Santa Barbara; W. A. Rowell, M. D., vice-president, Goleta; L. B. Coblenz, M. D., first vice-president at large, Santa Maria; R. W. Hill, M. D., second vice-president at large, Carpinteria; David A. Conrad, M. D., secretary-treasurer, Santa Barbara. The following delegate and alternate were elected for two years: William T. Barry, M. D., delegate, and Rexwall Brown, M. D. alternate.

SANTA CLARA COUNTY.

San Jose, Cal., Dec. 21, 1907.

The annual meeting of this society was held on December 18th, with forty-two members present. Besides the election of officers, those present listened to a very interesting paper presented by Dr. A. E. Osborne of Santa Clara. The result of the election was as follows: President, Dr. P. A. Jordan of San Jose; first vice-president, Dr. W. S. Van Dalsem of San Jose; second vice-president, W. F. Snow of Stanford University; third vice-president, W. W. Tourtillott of Morgan Hill; secretary, K. C. Park of San Jose (re-elected); treasurer, J. F. Burns of San Jose (re-elected); councillors, Drs. Simpson, Brown and Jayet of San Jose; delegate, Dr. Simpson of San Jose; alternate delegate, Dr. Wright of San Jose.

K. C. PARK, Secretary.

SONOMA COUNTY.

Sonoma County Medical Society met in Judge Seawell's courtroom. The new officers are: Dr. J. H. McLeod, president; W. J. Kerr, vice-president; G. W. Mallory, secretary; Lizzie Lain, Treasurer. The out-of-town doctors present were: Dr. J. R.

Swisher, John C. Condit, Healdsburg; W. J. Kerr and R. A. Miller of Sebastopol.

Dr. Swisher gave an interesting talk on our 1907 work. It made us feel that we had made much progress during the year. He was followed by the incoming president, Dr. J. H. McLeod, who gave us the reason why we should make our society attractive. Then followed Dr. F. O. Pryor's paper, "Observations and Experiences in Post-graduate Work." He related his experience in New York and Baltimore, of 1907, a most interesting paper to us all. Then we adjourned to the Occidental Hotel, where Dr. J. H. McLeod had prepared an excellent banquet, and while at the festive board, Dr. R. A. Miller, of Sebastopol, gave us his experience in the treatment of five cases of tetanus in which three patients recovered. His treatment was by the bromides and iodides. We adjourned to meet in Petaluma, February 13, 1908.

G. W. MALLORY, Secretary.

PUBLICATIONS.

The Principles and Practices of Dermatology. By Wm. Allen Pusey. D. Appleton & Co., New York and London.

William Allen Pusey's book on the Principles and Practice of Dermatology is the most recent large text book published on the subject. The author has carefully described all rare cutaneous conditions, and his article on general cutaneous therapeutics is quite complete. A great deal has been taken from the standard books of Crocker, MacLeod, and Stew-wagon.

The subject of electrical therapeutics is unusually interesting, particularly in relation to high frequency currents. The author claims that the high frequency currents are not of any more value than the ordinary brush discharge from a static machine. This seems to be a very narrow view as the action of high frequency currents is that of stimulation without discomfort, and this method of treatment is exceedingly satisfactory in various forms of localized pruritis, erythematosis, lupus, and some keratoses.

Dr. Pusey is an authority on radiotherapy, as he has probably done more work on this subject than any other dermatologist. His article on this subject is short but complete, and all people interested in this subject should consult it.

The subject on etiology of syphilis is interesting, but Dr. Pusey does not state that the spirocheta pallida is the specific organism. It seems pretty well accepted by all workers in bacteriology that at last the cause of syphilis is known, and it is unfortunate that a recent standard text book should not take this stand. The photomicrographs of spirocheta pallida are very poor. The references are very incomplete, but these were probably omitted to keep down the size of the book.

Tropical diseases are carefully considered. The great number of excellent photographs increase the value of the book. Besides many collected from other authors, Dr. Pusey has used many of his own. A few of these are poor, and should be omitted.

The article on sycosis is apt to be misleading to the student. The terms simple and common sycosis are used. This is unfortunate as sycosis has already been christened true, idiopathic, coccogenetic, and vulgaris, to distinguish it from sycosis barbae. The latter is real barber's itch, a condition produced by the ring worm fungus.

There is plenty of library space for this book, as it is complete, up-to-date, easy to read, and the great number of photographs add to its value.

H. M.

The Physiology of Alimentation. By Dr. Martin H. Fischer, Professor of Pathology in the Oakland College of Medicine. John Wiley & Sons, New York, 1907.

This volume of 322 pages has been written primarily for those who are interested in physiology as a science contributory to medicine. The important and fundamental researches of the past five years have been dealt with very satisfactorily. Special attention has been paid to Cannon's work on the movements of the digestive tract, to the theory of fermentation, especially its reversibility, to the structure and cleavage products of the protein molecule, to the role of osmosis and other physical factors in absorption and secretion, and to the properties of secretin, enterokinase, and erepsin.

It is but natural that a work written largely from the standpoint of physiology should fail to take account of certain important observations made by clinicians. For example, the statement that bacteria make up 1.13 per cent by weight of the dried faeces has been shown to be erroneous; for Strasburger's method demonstrates that they make up from 10 to 30 per cent. It is also worthy of mention that Pawlow's observations on dogs have been confirmed on man by Bickel and others. In addition, Bickel has shown that the so-called appetite gastric juice, which is secreted during the chewing and swallowing of food, is due mainly to reflexes of taste and smell. Some unjustifiable statements are made concerning the effect of an acidity upon gastric digestion. Although the acidity of the gastric contents seems normally to furnish the stimulus that leads to the opening of the pylorus, it is not proper to assume that a lack of acid will cause a retention of food in the stomach. On the contrary, we know that patients with achylia gastrica often have little or no food in their stomachs after an ordinary test meal, owing apparently to increased motility. Similarly too great emphasis has been laid upon the action of hydrochloric acid as a preventive of gastric fermentation. An absence of acid may damage the body through allowing more bacteria and more undigested food to enter the intestines, but it does not cause gastric fermentation. The determining factor here is stasis; for fermentation occurs in either acid or anacid stomachs, provided they do not empty properly.

As a whole, the book is exceedingly interesting and can be heartily recommended to those physicians who desire a readable account of the recent contributions made by physiology and physiological chemistry to our knowledge of alimentation.

Heart Disease and Blood Pressure. By Louis Fau-
geres Bishop, A. M., M. D. Second edition. E.
B. Treat & Co., New York, 1907.

This small volume of 120 pages attracts by its title, but unfortunately the text is disappointing. No blood-pressure measurements are recorded. The book is made up of a series of clinical impressions combined with more or less questionable theoretical considerations.

The Sexual Instinct; Its Uses and Dangers as Affecting Heredity and Morals. By James F. Scott, M. D. Second Edition. New York, E. B. Treat & Co., 1908. Price, \$2.00.

The author is eminently enthusiastic and it is unfortunate that this excess of enthusiasm leads him into paths of verbosity and tiresome reiteration of truths which, while perchance being almost axiomatic, are none the less very, very far from aiding in any practical solution of the "social evil." The enthusiasts of this sort may possibly effect results in the course of ten or twenty generations, but the

lack of practicality about their work makes the failure of immediate betterment a foregone conclusion. Nevertheless, fathers, mothers, teachers, and particularly those having strong religious inclinations, will derive much profit and edification from the book.

The Nervous System of Jesus. By Salvarona, Associate of the American Institute of Scientific Research, Pennsylvania, Langhorne, Bucks County. Henry G. Walters, Publisher. 50 cents.

At first sight of this title the religious may be offended in anticipation of irreverent treatment of an exalted subject; the scientific may expect an incursion into the field of "pathography" in the manner of the late Professor Moebius. But the indignation of the former would be allayed, and the curiosity of the latter disappointed, by reading this publication. For it is a farrago of generally unintelligible prose and lamentable verse. The author has somehow possessed himself of some of the vocabulary and the data of psychology and physiology, and has employed them most incoherently. The very feebleness of the performance disarms criticism. We refrain from quoting from the book in support of this judgment, as we have no desire to hold its author up to ridicule.

DEATH OF DR. ARTHUR E. GRESHAM.

Dr. Arthur E. Gresham of Long Beach, Calif., died of pneumonia on Dec. 30th, 1907, at the age of 42 years. He was born of English parents in Granada, West Indies. When 15 years of age he went to England to receive his education at Dulworth College, West London, and later his medical training in Dr. Bartholemew's College Hospital (University of London). He came to the U. S. in 1884 in company with his brother, the late Dr. Frederic C. Gresham of Sierra Madre, Calif., and entered Cooper Medical College in San Francisco, from which he graduated in 1885. He began practice in Los Angeles soon after, and for five years met with merited success, but his health then failed and a year later he re-entered practice at Sierra Madre as successor to his brother, who had died there, where for 12 years he was much sought after as a physician and surgeon and greatly beloved by the people. He removed to Long Beach in February, 1906, where he had become well established at the time of his death and held the respect of the public and the medical profession. He leaves a wife, one son and one daughter. His body was cremated at Los Angeles.

REGISTER CHANGES—

Those members who desire to keep their Registers corrected up to date should check this list carefully. In the following will be found all the official changes (in California) received from the 15th to the 15th.

Alexander, E. W., from 1296 Ninth ave., San Francisco, to Europe.

Austin, M. O., from 2534 Mission st., to Anglo Bldg., Sixteenth and Mission sts., San Francisco.

Berger, A., from 2325 Lombard st., to 951 Guerrero st., San Francisco.

Boone, Reunette E., from Sebastopol to Santa Rosa, Sonoma Co.

Bruguiere, P. S., from Reno, Nev., to Montgomery and Commercial sts., San Francisco.

Byron, A. E., from Sonoma, Sonoma Co., to Point Richmond, Contra Costa Co.

Carey, Henry B., from Affiliated Colleges to 1296A Ninth ave., San Francisco.

Cave, Frederick P., from 5309 S. Main st., Los Angeles, to Modesto, Stanislaus Co.

Chadwick, Fred C., from 218 Eighteenth ave., to 1054 Devisadero st., San Francisco.

Chamberlin, Chester U., from Healdsburg, Sonoma Co., to Los Gatos, Santa Clara Co.

Condit, J. Christy, from Windsor to Healdsburg, Sonoma Co.

Dice, S. D., from "Hotel Hollywood" to 136 Orange ave., Hollywood, Los Angeles Co.

Dickie, Walter M., from 2670 Green st., San Francisco, to O. T. Johnson Bldg., Los Angeles.

Edmundson, W. J., from El Verano, Sonoma Co., to Ukiah, Mendocino Co.

Ellis, Jas. A., Citizens' Bank Bldg., Alameda.

Freeman, C. H., from Lincoln, Placer Co., to Berkeley, Alameda Co.

Higbee, Annie Carveth, from Tropico to Whittier, Los Angeles Co.

Howard, Katherine I., from 1600 Fell st., to 2526 Ocean Boulevard, San Francisco.

Johnson, A. W., from 1060 Ellis st., to 710 Fourteenth st., San Francisco.

La Brie, Edmond, from Lincoln, Placer Co., to Fourth and K sts., Sacramento.

Majors, Ergo A., from Soledad, Monterey Co., to Delger Block, Oakland.

Martin, Robt. S., from 1617 Page st., to 1760 Haight st., San Francisco.

Nixon, Anne W., from 516 East Seventh st., Sterling, Ill., to —

Oliver, Joseph A., from Cooper College to 1825 Turk st., San Francisco.

Pryor, F. O., from Fulton to Santa Rosa, Sonoma Co.

Rajotte, Fabre E. C., from 1005 K st., Sacramento, to Lincoln, Placer Co.

Richardson, W. W., from Bradbury to Lissner Bldg., Los Angeles.

Rothschild, Max, from 902 Devisadero st., to Voorhies Bldg., cor. Van Ness and Fern aves., San Francisco.

Rowley, Q. J., from Downey to Grosse Bldg., Los Angeles.

Scamell, J. W., from 2825 Pine st., San Francisco, to Windsor, Sonoma Co.

Scheuer, G. A. J., from Sonoma to Guerneville, Sonoma Co.

Taylor, A. W., from Santa Barbara to Nordhoff, Ventura Co.

Wheeler, J. S., from Penryn to Roseville, Placer Co.

Wilson, Frank P., from 2855 Scott st., San Francisco, to Alameda.

New Members.

Los Angeles County—Anton, F. L.; Allen, Chas. Lewis, San Fernando Bldg., Los Angeles; Gwaltney, S.; Speer, G. G.

San Diego County—Clark, V. G., Granger Blk., San Diego; **Loos, H. Clifford**, 726 Fifty-fifth st., San Diego; **Thompson, H. A.**, 1364 Union st., San Diego.

San Francisco County—Ismardi, Mario C., 1404 Stockton st.

Santa Barbara County—Hindley, G. J. D., 1308 State st., Santa Barbara.

New Names.

Alameda County—Goldman, Samuel A., 2024 Cedar st., Berkeley, Coll. of P. & S., S. F., Cal. '07 (c) '07; **Whitlock, Robt. G.**, 2537 Fulton st., Berkeley, Cooper Med. Coll., S. F., Cal. '07 (c) '07.

Humboldt County—Wing, Lawrence, Eureka Cooper Med. Coll., S. F., Cal. '07 (c) '07.

Kern County—Taylor, H. N., Pioneer, Bellevue Hosp. Med. Coll., N. Y., '98 (c) '07.

Los Angeles County—Brown, H. V., 2121 East Fourth st., Los Angeles. Bennett Coll. of Eclec. Med., Oll., '02 (c) '07; **Campbell, Mathew N.**, Glendale. Queen's Coll., Belfast, Ireland, '04 (c) '07. Charlesworth, Geo. J., Elmonte, Univ. Trim. Coll., Can., '85 (c) '88; **Cooke, J. L.**, 109 S. Hill st., Los Angeles, Univ. of So. Cal. L. A., Cal. '05 (c) '07; **Elliott, Carroll C.**, Soldiers' Home, Univ. of So. Cal. L. A., Cal. '07 (c) '07; **Francis, Wm. Vare Chalmers**, 3853 S. Main st., Los Angeles, The Westminster Hosp. Coll., London, Eng., '00 (c) '07; **Harrad, R. W.**, 521 So. Olive st., Los Angeles, Bellevue Hosp. Med. Coll., N. Y., '04 (c) '07; **Kenyon, F. P.**, Pomona, Detroit Med. Coll., Mich., '76 (c) '07; **Loverin, Geo. S.**, 55 W. Euclid ave., Pasadena, Jefferson Med. Coll., Pa., '07 (c) '07; **McArthur, Duncan D.**, 959 S. Figueroa st., Los Angeles, Univ. of So. Cal. L. A., Cal. '07 (c) '07; **McBurney, M. R.**, 614 E. 21st st., Los Angeles, Hahn. Med. Coll. of Phil., Pa., '99 (c) '07; **Martin M. Lee**, Santa Fe Hospital, Los Angeles, Univ. of So. Cal. L. A., Cal. '07 (c) '07; **Montgomery, C. H.**, 747 So. Bonnie Brae, Los Angeles, Univ. of Toronto, Can., '02 (c) '07; **Nice, D. D.**, 807 E. Adams st., Los Angeles, Coll. of P. & S., Keokuk, Iowa, '90 (c) '07; **Ryan, Lee M.**, County Hosp., Los Angeles, Rush Med. Coll., Ill., '07 (c) '07; **Smiley, W. C.**, 860 N. Lake ave., Pasadena, Univ. of So. Cal., L. A., Cal. '06 (c) '07; **Trevalyn, Geo. H.**, 943 Potter Park, Los Angeles, Univ. of So. Cal. Los Angeles, '07 (c) '07; **Winter, A. H.**, 519 Wilcox Bldg., Los Angeles, Univ. of So. Cal. L. A., Cal. '06 (c) '07. **Sacramento County—Musante, A. S.**, 23d and P sts., Sacramento, Cooper Med. Coll., S. F., Cal. '07 (c) '07; **Sexton, L. L.**, Sacramento, Univ. of Cal., S. F., Cal. '07 (c) '07.

San Diego County—Winship, W. A., care of Dr. R. S. Williamson, Albatross and Wash., San Diego, Univ. Coll. Hosp. of London, Eng., '85 (c) '07.

San Francisco County—Lane, Paul H., 2344 Sutter st., San Francisco, Cooper Med. Coll., S. F., Cal. '07 (c) '07; **Palmer, C. B.**, 1836 Pine st., San Francisco, Cooper Med. Coll., S. F., Cal. '06 (c) '07; **Whitnew, Jas. L.**, 2620 Laguna st., San Francisco, Harvard Univ. Med. Coll., Mass., '05 (c) '07.

Santa Clara County—Clark, John A., 193 5th st., Gilroy, Univ. of Cal., S. F., Cal. '07 (c) '07.

Solano County—Turner, Harry W., Mare Island Navy Yard, Univ. of Pa., '06 (c) '07.

Address Unknown.

Mitchell, Chas. O., Amity, Prowers Co., Colo., Univ. of Colo., '07 (c) '07; **Smith, Stephen H.**, Las Encinas, Cal., Univ. of Mich., '05 (c) '07; **Sweitzer, S. E.**, 343 Andrus Bldg., Minneapolis, Univ. of Minn., '01 (c) '07.

Reinstated.

Boeseke, Elmer J., Santa Barbara.

Withdrawn.

Crabb, James N., Chico.

Wall, W. B., Santa Ana.

Deaths.

San Francisco County—McDonald, T. P., 1128 Sutter st., San Francisco; **Riley, Wm. C.**, 1796 Post st., San Francisco.

Sonoma County—Cole, Wm. G., Guerneville; **Ottmer, Henry C.**, Healdsburg; **Pierce, Joseph G.**, Sebastopol.